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BULLETIN

OF THE

American Iris Society

October, 1928

No. 29

R. S. STURTEVANT, Editor
ELLA PORTER McKINNEY and MARY J. AVERETT, Associate Editors

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Published Quarterly by
SCIENCE PRESS PRINTING COMPANY. LIME & GREEN STS., LANCASTER, PA.
Subscription price to members $3.00 per year. non-members $4.00 per year.

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THE AMERICAN IRIS SOCIETY

IRISES!—AND AFTER?

By Ella Porter McKinney

"What do you have when the Iris is gone?" is the constant query of visitors at the time of the great pageant in May and early June when the Tall Bearded Irises and the *sibiricas* in full bloom so possess the garden that no note is made of the yet unopening habitants, even now helping the picture with their varied growths.

My garden is the simplest possible of gardens, evolved from the material at hand, with the least expenditure for hired labor. It must furnish, other than that of my love, the means for its sustenance; it must give to a fruit-loving family a steady succession of choice fruit; it must furnish the vegetables that require quick transition from garden to table to preserve their fine quality, and it must furnish a place for happy leisure. That it does all this is only a repeated illustration of the bounty of a "field which the Lord hath blessed." We are in our garden throughout the entire season and, at all times, though the stress is so much on the Iris family, there is interest and often great beauty.

The space is oblong, one hundred and fifty feet wide by two hundred long, with an oak wood at the south, into which pathways ramble. These are kept walkable by an occasional run-over with the lawn mower, and offer opportunity for colonies of precious things like blue *Hepatica, Shortia, Iris verna, Trillium, I. cristata,* etc., among the dogwoods, which are planted in great numbers. One pathway terminates near a thriving bit of trailing arbutus—the special concern of all.

Long shadows lie across the upper end of the garden in the morning and across the lower in the afternoon, but every part of it is sun-drenched at some hour of the summer's day. Between the maples and the pines on the north to the oaks on the south, apple trees fresco the eastern boundary. Pear trees lean to the south from the maples on the north. Peach trees, climbing roses, and

grapes mark the western line, low, and with openings here and there through which the departing sun leaves the garden with reluctance in May and June.

The pathways are grass. There is a central one with hardy borders on each side. A cross path divides the garden two thirds of its length, with other small pathways for convenience. At the east and along the row of apple trees, the space which was the old carriage-way is kept in grass. It still is the cart passage to the rear, but by arranging necessary cartage when the ground is frozen, it is beautiful always in the summer. The important paths of the garden all come into this broad long space of turf, and, at the turning, where the way leads into the woods, it is much widened into a broad court—the east wall a Baldwin and the west a Delicious apple tree, with the turf flowing into the dogwood path through the wood. A wisteria and rose screen, with *Philadelphus* and lilacs, shuts away the tool-house, but not the hum of the bees, whose gray-white hives are on the south of the screen. Up and down this pleasant place of grass we spend our outdoor leisure. There is always cool shadow for June, and a sun-filled nook for October where our portable chairs and table may congregate.

In the borders along the main pathways I use Irises as an accent here and there, or in rows well back, leaving space free for a variety of interest, because all the vegetable plots are bordered by Irises. (Some of them, indeed, have succumbed to Irises!) Small fruit trees, flowering almonds, big bushes of old-fashioned roses, and tree peonies are planted directly in the perennial borders. These give shadows, varied lines, and opportunities to tuck in much diversity in the perennials and bulbs used in association. Under one pear tree there is an engaging little family of the western trout-lily (*Erythronium grandiflorum*); under another, where a faucet drips, are maiden hair ferns and forget-me-nots about the great wooden chopping bowl that catches the drip and spills it broadly.

Old-fashioned roses, and the one great dependable among the hybrid perpetuals, Mrs. John Laing, pruned high (so high that the casual visitor calls them "standards"), are planted at intervals of ten feet at the back of the borders on the central pathway. There are climbing roses tumbling from many places. Tausendschön, the climbing rose of tender beauty and no thorns, is often in bloom before the Iris is finished; Silver Moon and Christine Wright and

Gardenia pick up the color, and Lady Gay with Excelsa carry on into July.

There is a peony row and peony plants here and there, all white and pale pink with only an occasional deep, deep red. White foxgloves spire up, kept white by years of pulling out all tinged ones, and there is a pale blue delphinium near the Tausendschön and darker blue against the Gardenia roses. There are lots of gray-leaved plants, lyme grass, santolina, artemisia, clove pinks, etc. Shirley poppies in palest pink and white, scattered on the snow and allowed to come where they will, with hoe sparing and thinning where they crowd too much, carry June away on their shimmering petals. These we clear out in July, planting where vacancies occur, and making the places rich with compost, pale rose zinnias of the lower growing sorts, ageratum, tall and low, and blue petunias made ready in nursery rows.

July brings hollyhocks in pale pink, white, cream, and deep red. These are placed all about the garden here and there and made to dominate it in their season. At the same time the early pale lavender phlox, Eugene Danzanvilliers, and phlox Jules Sandeau in soft pink, and an early blooming white seedling with *Anthemis* in cream and pale yellow, and blue platycodon make lower splashes of color. There is then, too, *Hemerocallis* Florham, frilly, wide open, deep yellow, and sweet, and *Hemerocallis* Calypso, the lovely pale yellow Burbank hybrid; white *Agrostemma,* the froth of *Sedum album* over bulbs; softening masses of *Gypsophila* and of *Thalictrum;* bushes of southernwood and the beautiful gray green of *Ruta graveolens*—the old garden rue; *Veronica spicata,* paler and lovelier than the deeper and later *V. subsessilis* and, late in the month, the beloved *Hemerocallis thunbergi,* slender, pale yellow, and fragrant.

Creamy spires of yucca and steel blue eryngium and tawny *Hemerocallis fulva* have a corner of dryness all to themselves. There are Japanese Irises, very choice ones; some of these are kept in the long central borders as much for the foliage effect as for the bloom and these are either white, near white, or violet.

In August phlox in varying heights, pale and deeper pink and white, selected seedlings for the most part, dominates the long pathway borders. Other things weave in and out, lending shadow and haze—statice, purple violas, and *Veronica spicata,* covering itself again after being pinched at the end of the earlier bloom.

Over a prim little border of pink balsams, planted near our afternoon chairs, *I. dichotoma* spreads a hovering lavender mist from the vesper hour to that of curfew and the same Iris checks the footsteps in association with *Lilium speciosum* and *Statice latifolia*—a distinguished combination. The woven foliage of a line of grapes back of the Peony row screens indulgence there in my beloved tiger lilies, given a special setting of pale flesh-colored and white phlox.

In September come the only two dahlias I plant, a tall almost single creamy white, with a heart of gold and the old Chatenay, a slender growing, stiff-stemmed salmon pink that makes a touch of welcome color everywhere among the swarms of hardy *Asters* and the foaming masses of *Clematis paniculata.* This last, planted directly with the climbing roses and cut back every March to three feet, compels the resolve each mid-September to have a wedding in the garden next year at the time of the clematis!

Late September and early October, I sometimes think, are the best days of all. The beauty and dignity of the harvest pervades the garden. The pathways, green with autumn rains, lead through sun-warmed places fragrant with ripening grapes into shadow weighted with mellowing apples and out and under festoons of arching pears and into the sun again. The borders are still misty with Michaelmas daisies and blue with delphinium's second bloom, while the pink and gold-hearted dahlias are blooming their heads off, and Johnny-jump-ups peer in and out, fresh as in April. With a bunch of Niagara grapes in hand—grapes amber and transparent because the sun has had its full way with them—and a catbird bidding, in lowest minor, farewell to the *Philadelphus* that helped him with two broods, I ask, "Where, except in a garden, may we have, other than in the human affections, all that is worth having in this world—where?"

On warm days in November the bees are lured by chrysanthemums, old and hardy ones—some brought from under the eaves of gray old farmhouses—rose and pink, bronze and yellow, dull red and ivory, they reach out to the sun from under the same grapevines that shelter the columbines in May and June.

And when the last hard frost subdues all bloom in this month just before the snows, the Iris comes again to the fore in the pleasant outlines of pathways it makes with the varied grays, tans, and browns of the dying foliage relieved here and there by those of persistent green like *I. trojana* and *I. lutescens,* variety Statellae.

From an upper window the patterned squares and blocks of Iris, persisting yet in subdued beauty, give a pleasure far from melancholy.

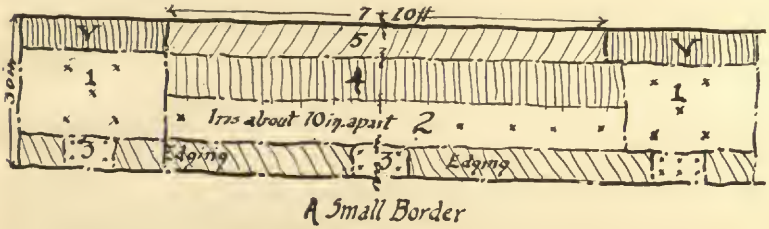
"Fertilization?" Yes, with so much growing on comparatively small space, heavy feeding must be given. Every vestige of sound waste is rotted in a screened compost pile, and the long black row that is forked out each autumn and spring to make way for the rakings of the season, piled on the coarse remnants of the year before, arouses emotions of delight that a Tiffany display man would covet. I buy lime, sulphur, tankage, phosphate, wood ashes, and bone meal, but never a pound of stable manure. The compost goes about shrubs, on the perennial borders, and about the Japanese and Siberian Irises. These perennial borders, too, receive tankage and bone meal, spread broadcast as early as possible after the spring cleaning. We like an occasional complete dressing of powdered sulphur and correct any acidity it may impart by a dressing of lime. The sulphur is a great discourager of blights, and red spider, so hurtful to phlox and violas. The fruit and the grapes get an extra tankage and bone meal treatment as well as wood ashes, or a good potato fertilizer rich in potash. The bearded Irises are given a top dressing of lime and bone meal at the earliest possible moment in the spring, or the latest in the autumn, and all new and all replantings are given the same fertilization.

"And weeds?" Yes, they are always with us—not vicious things like dock and thistles, no, but the garden is too big for the labor it can command. "Not a weed to be seen" could never be said of this joyous productive bit of ground. However, I have a strong aversion to tailored gardens anyway, and when I wince at the condition of a corner to which we have not yet been able to get, I also take comfort in knowing, as a mother with a big family of wholesome children must do, that needed food is given and cleanliness without meticulous grooming, and discipline—these three will do wonders with plants, as with children!

GARDEN PICTURES—2

By R. S. Sturtevant

A letter from one of our members in Connecticut suggested some problems for solution but after one cursory glance I lost the letter and though the two following pictures are in line with the request I feel sure that she had other wishes as well. Her suggestion that Irises were unusually good on a rented place seemed to me especially worth noting.



A Small Border

The problem is that of a narrow border such as might exist along a boundary or against a house. This latter (which is generally called a foundation planting) should be a last resort except on the simplest of country cottages or bungalows. Then perennials seem in place throughout the season but elsewhere they seem particularly weak and inappropriate unless strengthened by other planting of vine or shrub.

In a foundation planting the arrangement of doors and windows is the first consideration. Architecturally a doorway or group of windows is a center of interest and the planting should emphasize these given attractions. The fact that we do not plant across a doorway and *should not* plant high material to screen the windows is a matter of both common sense and esthetic appreciation. Let high accents enhance the importance of the door; let the harsh angle of a corner coming down to the ground be softened with a less emphatic accent and between let the attractions be lower and less commanding. If this "between" space is short, let it be unbroken in effect while if it be longer let the planting build up a bit between the window openings—keeping in mind, however, that

both the entrance and the corners build up still more strongly. In the accompanying plans I assume that this soft perennial planting runs between shrub accents of greater importance; there may be but one section between the door and the corner or, if it be a side planting, it may be repeated from corner to corner, the high points (V13) coming between windows.

The material of the house, whether vines may cling or will need support, the background color, red, yellow, white, or what-not, and, of course, the exposure should be considered in making the planting.

Where the border is very long it is a decided advantage to break its length by repeat plantings as at VI3 and though I have assumed that there is background of wall or fence, even a narrow bed in the lawn should be thus broken.

With these generalities in mind let us plant our plan for varying needs.

Against a Stucco Wall fully exposed to the hot sun. Spiny yuccas rear their white plumes (at 1) below the orange of the trumpet vine (V) and shelter a few husky bulbs of the tiger lily. Between these accents are lines of planting; tigridias flaring among plants of ageratum and both succeeding an earlier planting of the vivid *Tulipa gesneriana* (at 2); at 4 come Irises either all of a color dark against the stucco wall or in selected hues that deepen toward the center (Celeste, Drake, Parc de Neuilly, and Gaudichau in lavenders, or Her Majesty, Aphrodite, and Seminole or Pioneer in rose to red); behind, and for succession of bloom, might be a line of the yellow *Hypericum prolificum* or *moserianum*. Along the edging of sedums in variety there would also be regular accents of the intermediate Iris Golden Fleece, of the dwarf Tom-tit (purple) or the contrasting Carnation in shades of rose and red. As a further touch yellow crocus might come among the sedums and late flowering speciosum lilies among the hypericums.

Against White in a less arid site. For vines we might use roses on trellises, Dr. Van Fleet, Alida Lovett, Christine Wright, and Mary Wallace or the cream of Emily Gray, Gardenia, or the less hardy Shower of Gold and at the foot of each there would be a plant or two of the new hybrid New England asters (from W. A. Toole) that would be pegged down far out among the Irises during July and August. At 1 would be strong clumps of upstanding tall Irises, each different from the last but all of the same general color-

ing as seen from a distance; Alcazar, Ambassadeur, Glowing Embers, and L'Aiglon, or, perhaps Santa Barbara, Elsa, Dalmatica, and Gabriel. For such a clump we might plant closely for immediate effect or use one new purchase, letting it rise from a mat of lush growing sedum or other shallow rooting perennial or annual and waiting for our clump effect. Between (at 5) would be planted *Euonymus minimus* (3–4 ft. apart) to clothe the basement wall, and clumps of daffodils for early bloom; at 4 gladiolus in selected colors would be planted among hardy asters; and at 2 would be more Irises in harmony with the colors of the accent clumps—at least two or three of a kind (possibly more if planted very thickly in a staggered row). Often I take the color of a standard or a fall and match it in the near-by plantings. For example B. Y. Morrison will be lovely near Dalmatica, Monsignor at the foot of Santa Barbara, Ramona with Ambassadeur and the bronze of Prosper Laugier near L'Aiglon. This makes for almost automatic color harmonies and is interesting and safe if not carried too far.

Early dwarfs planted in a triple row about 3–5 in. apart and interplanted with crocus form the edging, while later dwarfs like Zwanenberg or Pearl Blue or Bluet make attractive accents (at 3). In planting this Iris edging great care should be taken to line up the rhizomes, the sheaves pointing outward, as the slightest irregularity of planting mars the straightness of the border;—this of course where no edging of brick or stone is available.

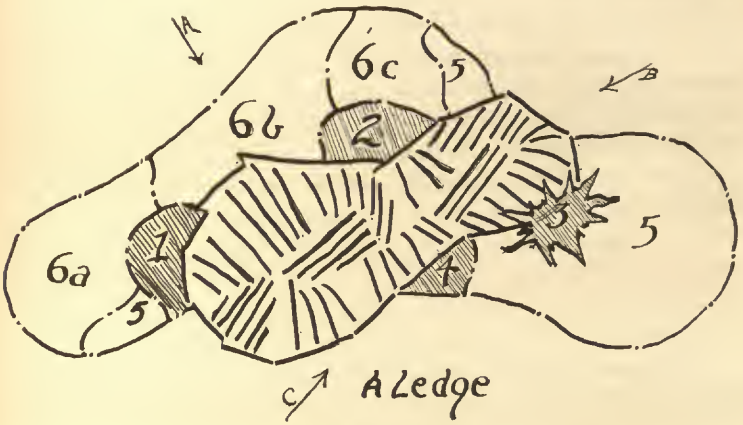
In Semi-shade and yet not so shady that Irises will not bloom: Grapes or Virginia creeper with the white spires of cimicifuga give height at V; *Hemerocallis flava* (with luteola for succession) mounds up at 1; the more shade enduring Siberian and *orientalis* Irises make a solid line at 2, while big ferns and *Lilium canadense* or *superbum* lean out from 4, and daffodils (at 5) join with the grape hyacinths among the *Iris cristata* at the edging in early spring color.

With added sun I should use more of the Siberian Irises and as the light grew steadier the bearded flags would find a place.

On the Rented Place and assuming that the Irises may be planted the previous fall: Scarlet runners and a few white cosmos back up big transplanted clumps of *Iris pseudacorus* that even in pretty poor soil will make 3–4 ft. spires of green. Ageratum (at 4) forms a cushion for the spikes of gladiolus in shades of cream and white, while Irises in pleasing hues give a line of late spring color.

We might have yellows all, Aliquippa, Primrose in clearest tones and Autumn Glow, Vesper Gold, Ochracea, and Valencia in amber and more tawny hues, or we might select instead, as more telling against the dark wall, plicatas in variety, Cygnet and San Francisco for height, True Charm, Delight, Loudoun or King Karl. Again the edging would be of dwarf Irises and back of all (at 5) might be a frail row of calliopsis or salpiglossis unless we needed the height of climbing nasturtiums.

With the heavenly blue of morning glories as a key-note our annuals might be quite different, maurandia at 5, forget-me-nots followed by California poppies as an edging, and flame colored glads rising from a mist of nigella at 4, the two succeeding a planting of gay tulips. The Irises might or might not change to suit our color scheme.



A Ledge

A boulder or a bit of outcropping ledge becomes more and more of an eyesore as it becomes isolated in smooth greensward apart from near-by plantings or trees. But, of course, there are times when it must be retained and may become the nucleus of a planting picture. If very large the planting may be a mere decoration, but whatever the size the rock should never just sit upon the lawn nor should it receive a neat necklace of even encircling planting. It is not a jewel requiring a setting but rather one jewel in a galaxy set in green turf. If it looks merely dropped on the turf we can grade up to it as we prepare the beds, thus taking away that ac-

cidental look. With an outcropping ledge we are usually more fortunate; there is a high spot to be emphasized (1) and a shelving away, again to be exaggerated by low planting (at 5), the one giving greater interest of height and the other tying the ledge even more completely into the ground.

In silhouette each of the accents 1, 2, and 3 has its value and whether we look from A, B, or C they tend to compose well with the more horizontal lines of the ledge and the other plantings. In a way the composition is analogous to that prevailing in a Japanese flower arrangement where heaven, and man, and earth each has its place. One (1) dominates in height and interest, 2 and 3 lend interest and balance while all the rest is but a colorful base.

Permanent Planting about a Large Ledge: A picturesque, almost a scrawny small tree dominates the picture (at 1). It might be Japanese maple, a purple plum, or a carefully selected flowering crab. At 2 a big juniper (*pfitzeriana*) gives winter interest, its gray a charming background to the gray of the Irises. At 3 a lower juniper (*tamariscifolia*) reaches far out over the ledge and at 4 the turquoise berried grape (*heterophylla*) carries foliage even further up the slope. A large mass of *I. cristata* and echoing touches form the lowest planting (at 5) and a well-selected grouping of at least three varieties in varying quantities give later bloom (6a, b, c). One might add other plants for succession but it will be better to keep the planting close in to the rock, and, incidentally, not to attract attention too strongly to so poorly placed an object at every season.

Permanent Planting about a Small Ledge: With a smaller ledge the whole scale of our picture is reduced, a Scotch Rose is big enough to dominate (at 1) and I should select the big single white *Rosa altaica*. *Potentilla* Veitchi (at 2) will give scattered blooms almost all summer while *Euonymus minimus* (at 4) and *Cotoneaster horizontalis* (3) will make for winter beauty. *I. cristata* with a touch of *Phlox divaricata* will again make a low carpet (5) and a mingling of just one variety of Iris and some low asters (at 6) will be a sufficiency.

Annuals for the Large Ledge: Since the height at 1 as compared to the length of the ledge should approximate the ratio of 3 to 5, a ten foot ledge requires an annual some six feet high and I have a dim remembrance of a variegated maize that would, I think, suit my needs. A fairly small plant of *I. psuedacorus* would be

equally grassy (and lower) for a sub-dominant, and a husky plant of *Arctotis grandis* with its moonlit tints would give variety of texture and color (at 3). For a vine I want sparse growth and rather wooly leaves, maurandia perhaps, while early dwarf Irises interplanted with portulacca in very carefully selected shades (at 5) and later Irises with purple petunias among them (at 6) would complete the planting. Please note that among newly planted Irises there is plenty of room for the more open growing annuals whereas a well-established Iris clump permits little interplanting.

Annuals for a Little Ledge: Here I should like heliotropes, leggy (1), bushy (2), and sprawling (3) for accents with an old-fashioned variegated ivy-leafed geranium clambering up the rock (4) (this last is usually hardy in Massachusetts) and then my Irises much as on the larger ledge. In selecting these my choice would depend almost entirely upon *from what distance* I chiefly viewed my planting. If close at hand I might select the delicate colorings of Cameo, Candlelight (just a stalk or two), Jubilee and Lona, or the dark tones of Joya, Seminole, and Majestic, while for distant effect I should rely upon the lightness of Taj Mahal, Susan Bliss, and Corrida or the brilliance of Lodestar, Shekinah, and Citronella. As usual there are endless solutions of the same problem and my solutions may prove but a guide for your solution.

God gave all men all earth to love,
But since our hearts are small,
Ordained for each one spot should prove
Beloved over all;
That as He watched Creation's birth,
So we, in godlike mood,
May of our love create our earth
And see that it is good.

From *Sussex* by Rudyard Kipling.

Prof. Essig's "Hillside Iris Garden" at the Berkeley, Calif., Iris Show—featuring his seedlings.

1928 EXHIBITIONS

(For Exhibition Policy and Management see BULLETIN No. 22, p. 3. Certificates of Honorable Mention are awarded at shows and should not be confused with Awards of Merit which must be won in Test Gardens.—*Ed.*)

The fifth annual Flower Show of the **Ashland** Garden Club (Virginia) was held May 18th, Mrs. John R. Fisher winning the Bronze Medal. There were ten classes for Irises, with 177 entries, a gain of 25 over the number for last year. Peonies, roses, annuals, and other perennials were shown in splendid form, while the classes for flower arrangements and potted plants were well filled. There were five classes in the children's group with several entries in each.

Iris Society members of **Berkeley** and **Oakland** (California) again held an exhibition at the Spring Flower Show sponsored by the College Women's Club on April 20th to 22nd. Mr. Salbach had a very interesting exhibit of the Mohr-Mitchell seedlings and many of the newer standard varieties and novelties. Prof. Essig's terraced hillside garden, which included only his own seedlings, won much favorable comment as well as a Silver Cup and a Silver Vase as the most outstanding Iris exhibit. Prof. Essig was also awarded a Certificate of Honorable Mention for his seedling No. 399A, a large, very dark velvety self. Rock gardens, wild flowers, landscapes, greenhouse plants, roses, succulents, and garden and floral pottery were features of this exhibition.

The Iris group around **Boston** staged a very successful show at Horticultural Hall on June 16th and 17th, the Massachusetts Horticultural Society cooperating. The Silver Medal was won by Mr. T. F. Donahue, with a very fine exhibit, while the Bronze Medal was awarded to Glen Road Iris Gardens, scoring the second highest number of points. Miss Sturtevant was also awarded a Certificate of Honorable Mention for her new yellow seedling, Sunlight.

From Mrs. Arnett comes a very interesting report of the second Iris Show held by the **Bozeman** Woman's Club (Montana) on June 15th and 16th. There were fifteen classes, with eighty-eight entries made by twenty-two exhibitors, a gain of ten exhibitors over last year. This would indicate a rapid growth of Iris interest and I hope we shall have the privilege of cooperating in the next show.

At **Cheshire** (Connecticut) the Bronze Medal was won by Mrs. Bernard Allen and the A. I. S. membership by Mrs. John Geist.

The **Columbia** Garden Club (South Carolina) held its Spring Flower Show on May 4th and 5th, with classes for Irises, roses, peonies, wild flowers, artistic arrangements, and table decorations. The Bronze Medal was awarded to Mrs. J. H. Gibbes, while the Garden Club awarded an A. I. S. membership to Miss Zadie Gullage, who scored the second highest number of points in the Iris section.

On April 30th and May 1st the **Dallas** Garden Club (Texas) staged its third Spring Flower Show. Mrs. Gross R. Scruggs won the Bronze Medal offered by the Society, scoring the most first prize points with entries of very high quality. Besides the Iris Section there were classes for flowering shrubs, roses, wild flowers, perennials, flower pictures, and table decorations. One of the outstanding features of the show was a very fine exhibit of cactus, more than forty varieties being staged.

The exhibit of the **Freeport** Garden Club (Illinois) on June 6th and 7th was as successful as all previous Iris shows staged by this club. Mrs. Pattison's non-competitive exhibit was the outstanding feature in the Iris division, containing many novelties. The collection of seedlings brought by the Sass brothers from Omaha was at all times a center of interest. Several very large rock gardens had been set up in the basement of the exhibition building, and in both design and quality of material used compared very favorably with those seen at the big March shows. Mrs. W. L. Calkins was awarded the Silver Medal. Five Certificates of Honorable Mention were awarded, two to seedlings from Chancellor Kirkland, of Nashville; one to Dr. Ayres' Persia; one to Jacob Sass; one to H. P. Sass.

On May 23rd the Garden Club of **Lexington** (Kentucky) held the Spring Flower Show, Miss Hume reporting all exhibits of high quality though the weather had been very unfavorable. Dr. Scott was awarded the Silver Medal, scoring the most number of first prize points. The Bronze Medal was awarded to Mrs. John L. Dodge, who also won the awards for the best specimen stalks in the show with Mady Carrière and Mildred Presby, the former having eight open blooms. Dr. Ayres exhibited some of his lovely seedlings, but not for judging.

The **Lowell** Garden Club (Massachusetts) held its second Spring Flower Show on June 20th under very unfavorable weather conditions, a steady rain for two days having damaged many of the flowers marked for exhibit. Mrs. Thomas Nesmith won the Bronze

A very interesting Iris planting made by the Garden Club of Lynchburg, Virginia. This planting shows what can be done to beautify a business district as it is at 13th Street, between Grace and Madison Streets, in the center of the city.

Medal with a very fine collection of Irises. Outstanding features of this show were the miniature rock and wild flower gardens, while the exhibits of peonies, roses, and other perennials added much of beauty to the exhibition room.

On May 22nd the Garden Club of **Lynchburg** (Virginia) held the annual Spring Flower Show, staging very large and interesting collections of Irises, peonies, oriental poppies, roses, and other perennials. The Bronze Medal was awarded to Mrs. Thomas Jellis Kirkpatrick.

The **Providence** County Garden Club (Rhode Island) held its first Iris show on June 14th, Prof. John E. Hill winning the Bronze Medal, while Highly Commended cards were given the exhibits of Mrs. J. H. McCallion and Miss Frances Lawton. Mr. T. F. Donahue and Miss Sturtevant sent many fine exhibits, Mr. Donahue winning the second highest number of first prize points. Both in the quantity and quality of bloom it compared very favorably with the shows visited in other sections of the country, and it is hoped it will become an annual event.

The **Redlands** Horticultural and Improvement Society (California) staged a very fine show in April. Both Dr. Berry and Mr. White have very complete Iris collections and visitors to this show are certain to see the finest varieties both among the novelties and the older introductions. Dr. Berry received two Certificates of Honorable Mention for a pink toned seedling and a velvety blue purple seedling. No report has been received with regard to the Bronze Medal.

The annual Flower Show of the James River Garden Club (Virginia), held May 24th and 25th in the auditorium of the Jefferson Hotel, at **Richmond,** was one of the most successful ever staged by this club. Miss Mary Beirne, of Ashland, was the winner of the Bronze Medal. Miniature gardens, flower paintings, window boxes, luncheon tables, classes for vegetables and small fruits were other features of the show, while the miniature gardens, bird boxes, and flower arrangements in the group for children attracted much interest.

The **Sioux City** Garden Club (Iowa) staged a very successful show, Mr. W. S. Snyder being awarded the Bronze Medal, while Mrs. W. G. Hart was awarded the A. I. S. membership given to the non-member of the Society making the most comprehensive exhibit in the novice classes.

The Brandywine Garden Club (Delaware) held its second Iris Show at **Wilmington** on May 28th. Mrs. E. Paul du Pont was awarded the Bronze Medal.

The third annual Iris Show of the National Capital Dahlia and Iris Society which was staged in the Mayflower Hotel, **Washington,** on May 24th and 25th was one of the largest shows of the season. The exhibits contained most of the recent introductions shown in splendid form, but because of the complete absence of daylight it was impossible to get a true description of the colors. Dr. Sheets won the Silver Medal for the most first prize points, with exceptionally fine entries, while the Bronze Medal was awarded to Mr. Adams for the second highest number of points. No Certificates of Honorable Mention were given.

The Garden Club of **Worcester** (Massachusetts) held its first exhibition on June 18th in the auditorium of the new Horticultural Hall of the Worcester Horticultural Society, which is one of the finest horticultural halls in the country. A non-competitive exhibition, it was one of the most artistically arranged I have ever had the good fortune to see. Rock gardens, artistic table decorations, luncheon, tea, and supper tables, miniature gardens and wild gardens were so well done by each exhibitor it would have been difficult to make awards. Mrs. Homer Gage had a very fine display of Irises in vases as well as a miniature Iris garden, which attracted much favorable comment from visitors, showing that Iris interest is growing in that locality.

Iris shows were held at New Haven in Connecticut and at Omaha and Seattle but we have no reports from them.

THURA HIRES, *Chairman.*

From the James River Garden Club, Richmond, Va., a correspondent writes, "You will be interested to hear that at our Spring Show Miss Frances Cole took first prize with blooms from her seedling Californian Irises—so graceful and lovely in tones of rose, cream, yellow, and violet."

This is welcome tidings to those of us who long to see these beautiful and decorative Irises made comfortably at home in a wider range of gardens.

Photograph by E. A. S. Peckham

Iris Society Officers and Directors in the garden of Mr. G. J. Boehland, Rockford, Ill., June 7, 1928. Left to right: Dr. Ayers, Mrs. Peckham, Mr. Connell, Mrs. Hires, President Wister, Mrs. Nesmith.

JAUNTING WITH THE JUDGES

By Ethel Anson S. Peckham

Iris enthusiasm was not dampened by deluges of Indiana rain nor was it deadened by clogs of Indiana sticky mud. Indeed, it was well there were some such restraining influences or perhaps, after seeing in Bluffton the gorgeous new varieties raised by Mr. Williamson and, at Fort Wayne, the best of the imported sorts grown by Mr. Mead, we might have lost our balance altogether. To be sure the charming hospitality extended to us everywhere we went would have counteracted the discrepancies of the weather (where it *did* behave badly) and maybe we kept our heads because we went in the hard, skeptical mood judges feel they must maintain.

Of course the judges and exhibitors are still arguing in our wake and they will go on doing it till they reach the judgment seat themselves. However, where one raises a controversy there is usually a step forward as the result; so all is for the best!

To go back to Indiana—we saw Dolly Madison, and *there* is an Iris! A beauty, of the light bluish blend group, tall, with a nicely-branched, sturdy stem, rather spreading flowers as to falls, and of firm substance. A day or so of beating rain had not discouraged it, and, although there was no sun, we could see a "glow" that made the flower noticeable. This is a plant you will hear from. Mr. Williamson has other good things, Vesper Gold among them, an apricot-colored blend, hard to describe. Much dissension is raised over varieties of such coloring. Fine sorts *are* needed. While one does not want a whole garden of "dull" shades, one does need some of them for contrast and they are far and away the most useful for decoration in the house. There is most certainly a place for them commercially, for the very reason of this use in "arrangement." Another and darker yellow-bronze seedling raised by Mr. Williamson with a flower having drooping falls will be of value, not only in sunny corners of our gardens, but I can imagine it in combination with pale yellow briar roses, reddish Japanese maple leaves, and a light smoky blue Iris with good dark buds such as Jacqueline Guillot. Perhaps another thing we pass over carelessly in selecting varieties is the value of the bud. Where these latter are markedly

different in color from the opened flower and where they are of unusual shape, they have an importance that should be recognized.

To be a good judge one should be impartial and not be swayed by personal likes and dislikes. Even if I were one of the (so-called) "cranks" who objected to veins on the blade of a standard or fall and damned a variety because of them, so far as my own garden was concerned, I think I could see that there is a place for these varieties. It amused me to be told by some very great experts that Aliquippa should not have had a Silver Medal "because it is veined." Well, the veins do not always show as distinctly in one locality as they do in another; but what of it, anyway? Veins are useful in their place just as all selfs or clear bicolors are in theirs! One member was quite wrought up because another had come to his (or her) garden and gone about with his nose down on the flowers "looking for the defects as if he had a spy-glass." In a garden planted for effect and giving a gorgeous mass of color just because only the best varieties of each color group were used, this was a true insult and I do not wonder that the owner was irritated. Let judges jaunt; but let them judge the flower in relation to its use. In the seedling garden, look at the plant and flower from every point of view. On the exhibition-bench also; but, unless a seedling is shown in quantity, how can it be judged for garden-value? I would suggest that seedlings sent in to be judged should, wherever possible, be shown in separate vases and there should be several stalks of each seedling. Let there be six. Only then can the judges get a real idea of the thing, and, if you are an exhibitor of seedlings, you can certainly study the matter of showing enough to learn how to pack and carry the flowers. It has amazed me to see in what poor condition exhibitors sent their fine seedlings to a show. If I were exhibiting in an ordinary class that much less depended upon, I would never enter a stalk in the state in which I have this year seen some seedlings appear. They really could not be judged. Now, there is no excuse for this; because if some exhibitors can take the care and trouble to go to the amount of work that is needed to show their flowers in fine condition, others can. I realize that "condition" is not in the schedule of points but I ask how a judge can tell whether a seedling is worth-while if it is all squashed, squeezed, broken, and with only half-opened flowers? Of course, the ideal way to judge seedlings is in the garden and we will come

to that eventually but even in that case, some stalks should be cut and taken into a light room to see their value indoors.

The critics of the awards to seedlings should remember that an Iris has to be judged against varieties of its own color-class irrespective of its "outstanding quality" or difference from varieties already introduced. Therefore, as we need whites, yellows, and true, deep blues and as those color-classes are way behind others at the present time, it is only natural that an H. M. may be given to a yellow that would rate low against fine things of other groups so far as substance is concerned. I heard that Sunlight should not have had its H. M. at Boston because it "lacked substance." Now, it had almost as much substance as Primrose and it is a different tone of yellow and an entirely different shape. There is no yellow just like it so good, either in size, clear color, or habit. It rated over 80 no matter how we put the score for substance down; therefore, since it rated over 80 it deserved the H. M. and, as one of the

Photograph by E. A. S. Peckham

Garden of Mr. Thos. F. Donahue, Newton Lower Falls, Mass., June, 1928.

judges, I prophesy it will fill its niche. Again, when, two years ago, Van Cleve received its H. M. in New Haven, there was doubt expressed. This fine, dark blue variety was splendidly shown in New Haven this year and proved plainly that even if we have Souv. de Mme. Gaudichau and Swazi we can and will delight in using Van Cleve. Speaking of dark blues, Mr. Mead has a very fine plant in Ion. Swazi looked rather sad in comparison. Many will call Ion "coarse" because of its wide foliage and thick, lush stems but this quality is balanced by big flowers of great firmness and the branching is good. It seems to grow easily, too, as does Van Cleve, though I would call the latter a lighter plant and a little more graceful. Swazi, as grown by Mr. Donahue, is certainly a fine plant and it would be interesting to see him try Van Cleve and Ion in his garden really to find out how the three compare. I hardly believe that my perspective as to Ion was put out of kelter by Mr. Mead's Jovian behavior while we were inspecting his garden. He would fling out his arm to point to some splendid mass of color in the distance, and, at each flourish, there would be a flash of lightning and a resounding roll of thunder! Mr. Mead's fine color-effects and great masses of good varieties are only rivaled by Mr. Donahue's. Both of these men have real gardens where the general flower-lover as well as the Iris enthusiast may feel at home, and each of them has the "nerve" and strength of character to use a variety he considers useful for his purpose, no matter how old it may be and no matter how scornful some of our leading authorities may wax on the subject. I never saw finer effects than those made by the masses of brilliant scarlet Oriental poppies used with large blocks of Flavescens in Mr. Donahue's garden and by Mr. Mead's great clumps of some of the despised (?) (not by me) foreign Irises running the gamut of the magentas.

At Freeport, the Messrs. Sass showed an interesting table of seedlings and Mr. Jacob Sass says that he has some lovely pale pinks that were not at that time in condition to show. One of his seedlings, Padusoy, received an H. M. It is a floriferous, crinkled dark wine-red self closely resembling the silk it is named after, and quite different in color-effect from anything we now have. The flower is of rather flat, flaring shape, with a stem of medium height. Persia, of Dr. Ayres' raising, received a Mention too. This medium blue bicolor-blend is handsome and sufficiently outstanding just to get by. This means something in a blue or a blend

group as we are about swamped with good varieties. Two of Dr. J. H. Kirkland's seedlings also received the coveted Mention. These were rather alike, though different in shape and growth and thus are, no doubt, sufficiently distinct in the garden. They are on the dark red "side" and, while good, they did not seem to be quite as markedly different from the general run as some of the seedlings seen in Mr. Williamson's beds which he has not yet exhibited.

Traveling about to so many shows and meandering among such a diversity of collections, it is intriguing to discover a gradual concensus of opinion about certain varieties and it is amusing to find that the Iris conceded to be the best product of a certain originator is rarely the one he (or she) considers the best! Mr. Shull told me he feels Sequoiah is *his* best and every authority I spoke to named Coppersmith as better! This latter variety was growing in splendid form at Mr. Wayman's the day the A. I. S. visited that garden and was placed directly behind L'Aiglon and not so far away from Mary Gibson. If it were necessary to have only one of the three, Coppersmith would be my choice. After Sequoiah has been open some hours in the hot sun there is little difference in the color of the flower from Coppersmith but the stem is much shorter and the habit different.

In Mrs. Kellogg's garden at West Hartford we saw Amerind, a dull brownish gold that disappears rather from a distance and which is very tall, having flowers too small for such long stems. I would rather await Mr. Williamson's new seedling where the flowers are better balanced. Valencia is a brighter edition of this coloring but is short, as we saw it at Mrs. Pattison's in Freeport.

At the Boston show a display not for competition made by Mr. Merton Gage contained some really gorgeous things, one of the finest being Germaine Perthuis. There were such a number of handsome stalks in the vase one would be led to believe this variety grows easily for Mr. Gage, and it does seem to be an "easy variety" from my own experience with it. The rich, reddish blue-purple is apparently velvety all over and I believe it will be a prize winner for show work.

Having exhibited and judged "considerable" I naturally notice the Irises that pull off the prizes in the specimen-stalk classes. A well-grown stalk of the real Princess Beatrice or of Mary Barnett will generally win in the blue self class. In fact, I have never yet

seen Mary Barnett lose a first prize. Bruno and Lent A. Williamson tussle for the dark blends. Shekinah generally gains the yellow prize; Kashmir White, the white; Susan Bliss, in fine fettle, is a sure winner in the pink, and Asia in the light blends generally catches the judges' eye. In the light standards class Mildred Presby will always win over Dalila and Rhein Nixe if condition is equal, while Rhein Nixe will again beat Dalila. A little observation along this line at shows judged by A. I. S. judges will give the exhibitor a good set of clues as to which varieties to choose for the smaller collections, and now that our new Symposium is out, the beginner can gain a good deal by studying it when selecting varieties to exhibit.

I should like to suggest to flower show committees that they glance over new exhibitors' entries and, if they find stalks of just buds with no opened flowers being shown, they might help the exhibitors by telling them to substitute varieties which are open. I cannot believe that an experienced exhibitor would enter stalks of this nature and also, if any of the Committee should be unlucky enough to break a flower, a note to that effect should be attached to the stalk for the judges' information. Our A. I. S. shows are better than the usual small garden club shows because we insist upon the varieties being named, but we should tighten the judging as a locality gets older in showing, and we should insist upon the exhibits conforming to the schedule. In specimen-stalk classes there should be but one stalk in a vase *and the exhibitor should make the choice,* for this is the only way for them to acquire that discrimination that is a necessary part of the experienced exhibitor or judge. To make things easy for them all the time is to make them helpless, exactly like dressing a child yourself instead of teaching him to fend for himself.

But unfortunately, no matter how perfectly everything may be run and how gracious and hospitable the hosts, there are two things that will always be prominent in the consciousness of the judges on these Jaunts. They may lose their heads but their *feet* are always with them. Towards the end of the Jaunt Mr. Wister's suggestion of rolling beds, could it be carried out, would be received with acclaim; yet the spirit of the A. I. S. is such that even these drawbacks will not keep them home!!

Photograph by E. A. S. Peckham

A lively discussion of an Iris disease by Dr. Dodge, Mr. Shull, Dr. Harper and Dr. Howe at the New York Botanical Garden, June 2, 1928.

Of interest to members in the South and in the northern part of the Pacific coast is the *Production of Certain Iris Bulbs* by David Griffiths, a circular issued in April by the U. S. Department of Agriculture. It deals with the commercial production of the bulbs which are of increasing importance for forcing, considering them under five groups: Spanish Iris, Dutch Iris, *Iris filifolia*, *Iris tingitana*, and English Iris. There are seven excellent plates. With the exception of *I. tingitana*, successes are reported from the whole length of the Pacific coast, though the author thinks they do better north of Eureka, from Long Island, Virginia, Illinois, Michigan, and Tennessee. Hope is held out that the English Iris will succeed in gardens "throughout the northern tier of states" when good bulbs which have not been injured in transit are given a faithful trial.

DESCRIPTIONS OF VARIETIES, PART V

By R. S. Sturtevant

Previous descriptions of varieties together with introductory notes and definitions will be found in Bulletins 6, 7, 9, and 12. With each passing year it has become less possible to secure adequate descriptions of the newer varieties as few breeders record properly made-up Data Cards and the Editor finds less time to make descriptions in many gardens.

With the publication of the new Symposium new ratings may be included but the assignment of varieties to types should be considered a matter of individual judgment rather than the result of an established classification.

(For full explanations of the methods and terms used in descriptions I must refer you to Bulletin No. 6 but a brief statement of the primary facts is a convenience.

The spectrum order of the color hues is as follows: Red and orange to O-Y, YO-Y, O-YY, Yellow, YG-Y, G-Y thru to green and blue to B-V, VB-V, Violet, VR-V, Red-violet, RR-V, Violet-red, RV-R, V-RR, and back to red.

In classification we use terms which may best be defined by giving examples. **Self**, pallida Dalmatica; **Veined self**, Her Majesty; **Bicolor**, Perfection, Rhein Nixe, Loreley, etc.; **Blend**, Quaker Lady, Nibelungen, Mary Garden; **Plicata**, Mme. Chereau.

W. signifies white, (l) light, (m) medium, and (d) dark tones.

All color terms are referred to "Color Standards and Nomenclature" by Robert Ridgeway. From Bulletin No. 7., p. 20.)

In giving ratings, the exhibition rating is given first, the garden rating second and the approximate number of jurors voting is given in parentheses.

ABENDA 79–81 (5)

Bicolor, V-R blend (m) Perry, 1923

Brief. S. purplish lilac flushed amber at base; F. velvety auricula purple fading to purplish lilac; haft most conspicuous, amber tinted at edge; growth vigorous; 3 ft.

Details. Beard white, orange tipt; styles with amber edge.

Remarks. Effect similar to that of Lord Lambourne or Rugajo.

ALIQUIPPA 89–88 (7)

(Queen of May x —)

Self, Y — Hall, 1924

Brief. Pale, massicot yellow shading deeper at center. S. arching; F. drooping; smooth textured; growth vigorous, rapid; 34 in.

Details. Haft faintly reticulated pale olive lake; beard conspicuous, orange tipt.

Remarks. A. I. S., Silver Medal 1926.

AUTUMN GLOW

(Shekinah x —)

Self, Y (1) — Sturt. 1926

Brief. Flower amber yellow flushed thruout; S. arched; F. drooping; beard conspicuous yellow orange; 33 in.

Remarks. Habit and form of Shekinah.

ASPHODEL 87–89 (4)

(Caterina x Louis Meyer)

Self, VR-V (m) — Mor. Sturt. 1926

Brief. Light lavender violet to lavender violet; haft conspicuous, white widely reticulated olive brown; S. domed; F. flaring; 42 in.

Details. Spathes flushed; pollen cream; fragrant.

Remarks. Comparable to Santa Barbara.

ASIA 92–88 (27–38)

Bicolor, blend (1) — Yeld, Wal. 1920

Brief. Large; S. domed, light lavender violet shading to chamois at base; F. light hortense to manganese violet; haft conspicuously reticulated hazel to zinc orange; 4 ft.

Details. Beard, projecting, white, yellow tipt.

Remarks. A. M., R. H. S.

AUTUMN KING 74–77 (11)

Bicolor, V (d) — H. P. Sass 1924

Brief. S. Dauphin's violet, F. anthracene violet; haft whitish, finely reticulated; 30 in.

Remarks. Noteworthy only for its tendency to bloom a second time in the fall.

AZRAEL 87–84 (4–8)

(Caterina x Alcazar)

Bicolor, R-V (m) — Mor. Sturt. 1924

Brief. Large; S. domed, ageratum violet; F. flaring, petunia violet fading to edge; 40 in.

Details. Low branching; very fragrant.

Remarks. Unusually blue-toned in effect.

AVATAR

Bicolor, R-V blend — Longfield 1927

Brief. Large; S. buff widely flushed light heliotrope gray; F. velvety prune purple; 40 in.

Details. Haft conspicuous, olive ochre heavily reticulated chestnut; styles color of S.; beard conspicuous, orange.

Remarks. Most distinctive contrast of color warmed by yellow at the center.

BALDUR 83–82 (6)

(Nine Wells x Alcazar)

Bicolor, RV-R (d) — Mor. Sturt. 1923

Brief. Large, S. light vinaceous lilac with dark wire edge; F. velvety dark maroon purple; drooping; 4 ft.

Details. Low branched; fragrant; beard conspicuous, white, orange tipt.
Remarks. Type Ambassadeur.

BEAU IDEAL 82–78 (9–13)

Plicata, W — J. Sass 1924
Brief. White widely bordered petunia violet; beard bluish, orange tipt; 33 in.
Remarks. Habit and form of Jubilee, Lona, etc.

BELISAIRE 84–83 (10)

Bicolor, blend (m) — Cay. 1924
Brief. S. vinaceous fawn flushed chamois, F. vinaceous purple; haft and styles conspicuous, flushed chamois; 3 ft.
Details. S. cupped, F. drooping; beard white, orange tipt.
Remarks. An improved Mme. Blanche Pion. C. M., N. H. F. 1922.

BERTRAND 89–87 (3)

(— x Dominion)

Bicolor, V (d) — Bliss 1920
Brief. Large; S. dull bluish violet; F. straight hanging, velvety pleroma purple; 3 ft.
Details. Beard dense, yellow-orange; haft closely reticulated.
Remarks. Dominion Race. "Blue-toned." A. J. Bliss.

BERYL 78–81 (3)

Bicolor, V (d) — Bliss 1921
Brief. Large, S. lavender violet, F. anthracene violet fading at edge; 3 ft.
Details. Haft reticulated vinaceous rufous.
Remarks. Dominion Race in form and habit.

BOLINGBROKE 81–79 (5)

(cypriana x Miss Willmott)

Self, W — Hort. Wal. 1922
Brief. Pearl white; S. arching, F. flaring with incurved tips; haft conspicuous, reticulated olive to lavender; 33 in.
Details. Beard conspicuous, white, orange tipt; S. occasionally flecked pearl blue.
Remarks. Type Kashmir White.

BOYER (M. Boyer) 74–78 (8)

Bicolor, blend (d) — Denis 1913
Brief. S. deep brownish vinaceous, F. velvety blackish red purple; 33 in.
Details. S. erect, F. smoothly rounded, haft pale, conspicuous, reflecting primuline yellow edge of styles; beard conspicuous orange, brown tipt.
Remarks. Type Valery Mayet.

CAMELIARD

((Shel. x Sarpedon) x Valkyrie)

Bicolor, Y blend (d) — Sturt. 1927
Brief. Large, ecru olive, the blade of the falls overlaid with a livid purple flush; 4 ft.
Details. Beard, conspicuous orange; haft heavily reticulated olive.
Remarks. A blended variegata of size and height.

CANDLELIGHT 96–91 (3)

(Aurea x Caterina)

Self, blend (1) — Andrews 1926
Brief. Large, lilac shading to deep colonial bluff at center of flower; beard wax yellow; 40 in.
Details. Flower rather bell-shaped; S. domed, F. drooping; haft conspicuous.
Remarks. Afterglow coloring.

CARCANET 77–82 (8)

(Yellow S. x Lent A. Williamson)

Self, Y — Sturt. 1924

Brief. Ruffled, S. pinard yellow, F. baryta yellow widely veined at haft chestnut; beard conspicuous, orange; 3 ft.

Details. S. erect, F. flaring.

Remarks. Introduced for garden effect.

CARNATION

(Anne Leslie x —)

Bicolor, V-R (m) — Sturt. 1926

Brief. S. light pinkish lilac, F. velvety magenta purple; 22 in.

Details. Foliage slightly tinged at base; flower fragrant, very stiff form; beard conspicuous, orange; styles pinkish lilac.

Remarks. Distinctive color combination for low mass.

CAROLINE E. STRINGER 84–83 (10–13)

(Her Majesty x —)

Self, V-R (1) — J. Sass 1924

Brief. Very pale rose purple, ruffled; 31 in.

Details. Haft with clean cut reticulations, S. arching, F. flaring.

Remarks. Habit and form of Jubilee, etc., almost a blush white.

CHARTIER 88–89 (3)

((Windham x —) x Wyomissing)

Self, W — Hall 1925

Brief. Purest white with very light brownish reticulations on the haft; 32 in.

Details. S. arching, F. drooping; beard dense, yellow tipt.

Remarks. A. I. S. Silver Medal 1927.

CORNUAULT (M. CORNUAULT) 79–80 (6)

(ricardi x squalens)

Bicolor, blend (m) — Denis 1918

Brief. Effect clay color, the falls deeply flushed perilla purple; 30 in.

Details. S. erect, F. drooping; haft conspicuous, flushed amber; styles color of S.

DELIGHT 84–83 (9)

(Juniata x Juniata S.)

Plicata W — Sturt. 1923

Brief. White in effect, the palest rose purple of the style tinting the base of the segments; haft finely reticulated rufous and rose purple; 38 in.

Details. S. arching, F. flaring to drooping; beard white, red-orange tipt.

Remarks. A. M., A. I. S. 1925.

DOLLY MADISON 93–91 (3)

(Lent A. Williamson x —)

Bicolor, blend (1) — Longfield 1927

Brief. Large; S. mauvette flushed pale colonial buff, the flaring falls also flushed chinese violet; beard conspicuous, orange; styles colonial buff; 3 ft.

Details. Well-branched.

Remarks. Comparable to Mme. Durrand in color and habit. H. M., A. I. S.

EDGEWOOD

((trojana x —) x (Lohengrin x —))

Bicolor, R-V (m) — Hall 1926

Brief. S. light hortense violet, F. velvety pansy violet; 46 in.

Details. S. arching, F. flaring to drooping; beard white, yellow tipt.

EL CAPITAN 86–87 (7–10)

(mesopotamica x Oriflamme)

Bicolor, VB-V (m) — Mohr-Mit-Salb. 1926

Brief. Large, S. bluish violet, F. dull bluish violet; haft conspicuously veined on white; 4 ft.

Details. Widely branched; beard conspicuous, orange tipt.
Remarks. Type Conquistador. H. M., A. I. S. 1935.

ELSINORE

((Lohengrin x —) x Aurea)

Bicolor, Y (m) Hall 1925
Brief. Primrose yellow, segments widely bordered with vernonia purple; 34 in.
Details. S. conic, F. drooping, beard yellow.

ENDYMION

(Afterglow x —)

Self, blend (1) Sturt. 1924
Brief. Flushed pale lilac on baryta deepening to empire yellow at the center; 3 ft.
Details. Beard orange; fragrant.
Remarks. Habit of Afterglow, coloring a warm buff in effect.

EVADNE 85–87 (7)

Bicolor, RV-R (d) Bliss 1921
Brief. S. daphne red, F. schoenfeldts purple, flaring; 3 ft.
Details. Fragrant, beard orange, conspicuous.
Remarks. Type Mt. Penn; excellent in mass.

FELDSPAR 76–83 (3) IB

(Gerda x Alcazar)

Bicolor, Y Mor. 1923
Brief. Colonial to deep olive buff, russet to deep olive reticulations on claw and haft; 20 in.
Details. Exceptional substance; low and well-branched; beard conspicuous white, orange tipt.
Remarks. Interest of detail only.

GARNET 82–86 (3)

(Princess Royal x Archevêque)

Bicolor, R-V (d) Sturt. 1924
Brief. S. pansy violet, cupped; F. drooping, blackish purple; velvety; 3 ft.
Detail. Stalk slender; beard white, brown specked.
Remarks. Small flowers gracefully poised.

GENERAL GALLIÉNI 78–74 (3)

Bicolor, R-V (m) Millet 1923
Brief. S. lavender violet, F. mauve, flushed deeper below beard; haft and styles conspicuous, grayish with olive ochre edge; 3 ft.
Details. S. arched, F. flaring to drooping; beard greenish yellow.
Remarks. "Effective as a blue-toned mass in Calif."

GEO. J. TRIBOLET 90–88 (10–18)

Bicolor RR-V (d) Longfield 1926
Brief. Large, S. nigrosin violet, F. velvety blackish red purple; flaring to drooping; 4 ft.
Details. Foliage tinged at base; low and widely branched; haft, styles, and beard conspicuous, amber tinted.
Remarks. Type Morning Splendor.

GHANDI

Bicolor, blend (d) Burchfield 1923
Brief. S. lobelia violet lightening to vinaceous drab at base; F. lavender violet heavily veined hyacinth violet; 30 in.; late.
Details. Haft dark; beard brown specked, narrow.
Remarks. Type Rev. Wurtelle.

GRACE STURTEVANT 91–87 (9)

(— x Dominion)

Bicolor, blend (d) Bliss 1926

Brief. Large, S. deep livid brown shading to sorghum brown, F. velvety violet carmine; honey yellow and brown styles and conspicuous orange beard; 40 in.

Details. Fragrant; S. open, F. drooping.

Remarks. Extremely rich on the brown tones.

HESPERIA 84–82 (5–8)

Bicolor, blend (m) Longfield 1926

Brief. S. light drab, F. velvety blackish red purple; conspicuous amber flush on styles, haft, and standards; 40 in.

Details. S. cupped, F. drooping, with dark wire edge; beard conspicuous, orange.

Remarks. Effect of Nibelungen but less yellow. Habit Ambassadeur.

HORIZON

Self, V (1) Mor. Sturt. 1925

Brief. Large, light wistaria to dull light violet; low and well-branched; 42 in.

Detail. Haft white with fine greenish olive reticulations; beard white, yellow tipt

Remarks. Color of Corrida—larger.

INNER GLOW 78–82 (5)

(Dawn x Shekinah)

Self, Y (1) Sturt. 1924

Brief. Sulphur shading to pinard yellow at center; 32 in.

Details. S. erect, F. flaring; haft yellow with fine, orange reticulations.

ISHTAR

((Dawn x Shekinah) x Sherbert)

Bicolor, blend (1) Sturt. 1925

Brief. Large, S. mustard yellow fading to olive and washed with light vinaceous gray; F. bishop purple fading to ageratum purple at edge; center honey yellow; 42 in.

Details. Foliage tinged at base; fragrant; beard, yellow orange.

Remarks. A buff Sindjkha.

JACINTO 80 (10)

(mesopotamica x Isoline ??)

Bicolor, blend (1) Berry 1924

Brief. Large, S. light lobelia violet flushed with cream buff; F. flushed ageratum violet; effect almost a self; 4 ft.

Details. F. with dark wire edge; haft white heavily reticulated snuff brown; styles ivory at edge; beard conspicuous, yellow; mid-ribs of petals tinged darker.

JUBILEE 85–84 (16–19)

Plicata, blend (1) J. Sass, Sturt. 1923

Brief. S. colonial buff fading to peach color, F. cream white; the flower heavily flecked with dark brown toward the center; 33 in.

Details. Fragrant; S. frilled, erect; F. drooping, satiny; beard yellow orange, brown specked.

Remarks. The type of a number of fine Sass plicatas.

KALIF

(Alcazar x Miss Willmott)

Bicolor, R-V (1) Sturt. 1924

Brief. Large, S. very pale verbena violet tinged colonial buff at base; F. flaring, mauve fading towards edge; 42 in.

Details. Haft conspicuous, reticulated perilla purple to citrine on a citron to cream ground; beard conspicuous, yellow orange.
Remarks. Type Asia—lighter.

KING KARL 85–83 (11–13)

Plicata, blend (1) J. Sass 1925
Brief. Softly blended deep colonial buff and dull magenta purple, the falls heavily dotted with a cream white center; 33 in.
Details. S. ruffled, F. flaring; beard orange tipt.
Remarks. Type Jubilee. A. M., A. I. S. 1927.

LAMIA

(Lent A. Williamson x Sherbert)

Bicolor, blend (1) Sturt. 1927
Brief. S. pale laelia pink, F. eupatorium purple; the whole center of the flower flushed amber yellow; 4 ft.
Details. Beard conspicuous, yellow tipt.
Remarks. Type Mme. Cheri.

LODESTAR

((Gajus x —) x Iris King)

Bicolor, Y Hall 1925
Brief. S. lemon chrome, F. velvety claret brown, bordered lemon chrome; 3 ft.
Details. S. erect, F. flaring; beard yellow orange.
Remarks. Type variegata—bordered. A. M., A. I. S. 1927.

LONA 84–83 (10)

Plicata, blend (1) J. Sass, Sturt. 1923
Brief. S. pale purplish vinaceous sprinkled on naples yellow ground; F. with ½ in. penciled border of amaranth purple on a white ground; 33 in.
Details. Beard, conspicuous yellow orange, brown tipt; wire edge to fall; haft and styles tinted yellow ochre.
Remarks. Type Jubilee—coloring Mme. Chobaut.

LOUIS BEL 85–81 (16–20)

Self, R-V (d) Denis 1921
Brief. Mulberry to prune purple, very satiny; 33 in.
Details. Haft, styles, and bluish beard flecked with mars brown.
Remarks. Growth reported as variable. Effect very rich.

MELROSE 78 (5)

Bicolor, V (m) Simpson 1926
Brief. Large, S. bradleys violet, F. madder violet fading at edge; 40 in.
Details. S. floppy, F. drooping to incurved; beard orange typt; styles buff at edge.
Remarks. Type Mary Orth—paler.

MICHELINE CHARRAIRE 90–87 (16–14)

Self, W Denis 1924
Brief. Large, greenish white; haft conspicuous, reticulated chrome to chestnut; 40 in.
Details. S. arched; F. flaring; beard conspicuous, orange tipt.
Remarks. Growth reported as variable. Type Edith Cavell-Argentina. C. M., N. H. F. 1924.

MILKY WAY 80 (7–12)

Self, W Sturt. 1922
Brief. Milk white; haft and claw finely reticulated violet; 38 in.
Details. S. arching, F. drooping; beard yellow tipt.
Remarks. Type Mrs. Horace Darwin—taller

MME. CÉCILE BOUSCANT 89–88 (15)

(ricardi x Queen of May)

Self, R-V (1) Millet 1923

Brief. Large, light hortense violet to light amparo purple, pinker in effect; 40 in.

Details. Haft conspicuous, white, finely reticulated rufous; beard bluish, orange tipt; crests flecked clear blue.

Remarks. Type Mother of Pearl. C. M., N. H. F. 1925.

MONTOUR

(Mount Penn x —)

Bicolor, blend (m) Hall 1925

Brief. S. pinkish cinnamon flushed magenta; F. velvety burnt lake; 30 in.

Details. Beard orange.

MY LADY

Plicata, W (m) McKinney, Totty 1925

Brief. White flushed and dotted lavender violet, haft dotted maroon; styles olive buff at edge; 42 in.

Details. Beard orange tipt; crest fringed, with dark edge.

Remarks. A. M., A. I. S. 1927.

NATHALIS

(Windham x —)

Bicolor, R-V (1) Longfield 1927

Brief. Almost a self, hortense violet flushed litho purple below beard; 3 ft.

Details. Haft conspicuous, amber; edge of styles amber; beard yellow.

Remarks. Coloring of Mme. Cécile Bouscant; habit of Balboa.

OLD IVORY 78–83 (6–9)

Self, W Sturt. 1924

Brief. Amber fading to almost white, haft reticulated orange cinnamon to vinaceous brown; beard conspicuous, orange; 30 in.

Details. Stalk slender; S. arched, F. flaring.

Remarks. Type La Neige.

OLYMPUS 80–83 (4)

Bicolor, blend (m) Perry 1923

Brief. Light vinaceous lilac, center of fall flushed napthalene violet; 3 ft.

Details. S., F., and crest wire edged; styles with honey yellow edge.

Remarks. Habit Abenda—Lord Lambourne—less color.

PEARL BLUE 75–80 (3) 1B

Self, B Sturt. 1925

Brief. Palest pearl blue often flecked mauve; rounded blooms; to 2 ft.

Details. Styles milk white; beard pale yellow tipt; foliage lax, slender, evergreen.

Remarks. Selected in garden of E. B. Williamson; suggests regelio-pogon parentage.

PENDRAGON

(— x Dominion)

Bicolor, V (d) Bliss 1920

Brief. S. dull violet, F. velvety cotinga purple, horizontal; 3 ft.

Details. S. arching; haft reticulated brown; beard yellow.

Remarks. Dominion Race. "Duller and brown toned." A. J. Bliss.

PETRUCCHIO 90 (3)

(Iris King x Alcazar)

Bicolor, V-RR (d) Mor. 1924, Sturt. 1929

Brief. S. lobelia to saccardo violet, F. dahlia carmine; 30 in.

Details. S. domed, F. flaring; beard conspicuous, orange; haft reticulated brown on yellow.
Remarks. "Brilliance."

PIONEER 89–90 (15)

((Pacquita x pallida) x (Cordelia x Paladin))

Bicolor, R-V (d) Bliss 1924
Brief. Pansy violet to velvety raisin purple; 42 in.
Details. Well and widely branched; S. arched, F. drooping; haft reticulations violet to hazel; beard bluish, orange tipt.
Remarks. Unusually rich self effect.

PRIMAVERA 83–82 (8–5)

(pumila x mesopotamica)

Self, Y Mohr-Mit. 1926
Brief. Large, barium deepening to reed yellow; beard conspicuous, yellow; 2 ft.
Details. Very fragrant; S. doomed, F. drooping.
Remarks. Almost an Intermediate; color carries well.

PRINCE CHARMING 77–80 (3)

Plicata, W Sturt. 1924
Brief. White, S. flushed and netted mauve, F. delicately frilled petunia violet; 3 ft.
Details. S. domed, F. drooping; beard orange tipt; keel chinese violet.
Remarks. Type Jeanne d'Arc—a long flower.

RED ADMIRAL

(— x Dominion)

Bicolor, V-R (m) Bliss 1920
Brief. S. light lobelia violet, F. velvety blackish red purple; center stained amber; 33 in.
Details. S. arching, F. hanging; beard yellow orange.
Remarks. Red-toned Dominion Race.

RHEINGAUPERLE 83–87 (14–16)

Self, V-R (1) G. & K. 1924
Brief. S. tinted mauvette at edges, F. flushed rose purple at center; 30 in.
Details. S. arched, F. straight-hanging, haft and beard flecked brown.
Remarks. Type Wild Rose.

RIALGAR 81–82 (10)

(Prosper Laugier x Wawayanda)

Bicolor, Y blend (m) Sturt. 1924
Brief. S. lemon yellow, F. hellebore red, center passing into tawny olive veins on the yellow ground; 2 ft.
Details. Beard conspicuous orange; very smooth textured; foliage yellow-green.
Remarks. Type Honorabile.

ROMOLA 87–89 (9–12)

(— x Dominion)

Bicolor, R-V (m) Bliss 1923
Brief. S. pale lilac, F. roods violet, velvety; 33 in.
Details. Center of flower tinged pale ivory yellow; beard conspicuous, yellow.
Remarks. Typical Dominion Race.

ROSADO

(Parisiana x mesopotamica)

Self, RR-V (1) Mohr, Sturt. 1925
Brief. Large, chinese violet to lighter; 42 in.

Details. S. domed, F. flaring to drooping; haft conspicuous pale buff; beard orange tipt.
Remarks. Type Mme. Cécile Bouscant.

RUBYD (Ruby) 78–83 (11–13)

Self, RR-V (d) Dykes, White. 1922
Brief. Nigrocene violet; beard conspicous, orange; 3 ft.
Details. S. domed, F. straight-hanging; styles white at sides; free flowering.
Remarks. Comparable to Oporto.

SALONIQUE 77–78 (13–16)

Bicolor, blend (m) Cay. 1922
Brief. S. marguerite yellow flushed pale violet; F. velvety raisin purple veined on white; styles yellow; 27 in.
Details. S. cupped, F. flaring to drooping; beard orange tipt.
Remarks. Type Dalial. C. M., N. H. F. 1921.

SAN FRANCISCO 90–88 (4)

([(Juniata x mesopotamica) x Parisiana] x (mesopotamica x Parisiana))
Plicata, W Mohr-Mit.-Salb. 1927
Brief. Large, white, S. with ¾ inch fine frill of lavender violet veins; F. with similar venation on haft and beyond beard; 42 in.
Detail. S. domed, F. rounded with flaring tip.
Remarks. Dykes Medal 1927. The first of the giant plicatas.

SANTA BARBARA 91–89 (12–19)

Self, VB-B (m) Mohr-Mit. 1925
Brief. Chicory to deep chicory blue thruout; 42 in.
Details. S. domed, F. flaring; fragrant.
Remarks. Type Albert Victor.

SAPPHID (Sapphire) 81–85 (6–8)

Self, VB-V (m) Dykes 1922
Brief. Deep soft bluish violet, beard conspicuous, red orange; 18 in.
Details. S. arching, F. flaring; haft with few garnet reticulations.
Remarks. Type Goldcrest—early season.

SEA FOAM IB

(Bridesmaid DB x Sophronia)

Self, W Sturt. 1928
Brief. White, the falls sea foam yellow at haft; beard conspicuous, white, yellow tipt; 2 ft.
Details. Fragrant; S. domed, F. incurved; styles spoon-shaped with touch of lavender at base of keel.
Remarks. Type Kashmir White—Miss Willmott.

SNOW WHITE 85–87 (4)

(Crinoline x Dream)

Self, W Sturt. 1926
Brief. White thruout, with pale green tint on mid-ribs and haft; 3 ft.
Details. Frail looking; S. arched, F. drooping; beard conspicuous, white, greenish tipt; styles pearl edged.

SOPHRONIA

(Kashmir White x Alcazar)

Self, W Mor. Sturt. 1924
Brief. Heavy white with faint greenish yellow reticulations on haft; 34 in.
Details. S. domed, F. flaring-rounded; beard conspicuous, yellow tipt.
Remarks. Type Kashmir White.

TANCRED 80–85 (3)

(Ossian x (Monsignor x M))

Bicolor, blend (m) Sturt. 1924

Brief. S. flushed olive buff; F. veined and flushed perilla purple on olive buff; 33 in.

Details. Foliage tinted at base; long flower with domed S. and drooping F., beard conspicuous, yellow; styles white, edged olive buff.

TIMUR

(Ossian x (Monsignor x M))

Bicolor, blend (m) Sturt. 1924

Brief. S. light vinaceous purple; F. velvety, confluent veins of dull dusky purple reveal an aconite violet border; 3 ft.

Details. Beard orange, brown specked.

Remarks. Sister seedling of Tancred, ibid.

TINTALLION 75–76 (11–15)

(Miss Maggie x —)

Self, V (1) Sturt. 1921

Brief. Palest lavender deepening at the tip of the falls; 2 ft.

Details. Foliage tinged at base; S. fluted, arching; F. flaring.

Remarks. Low garden mass.

TRUE CHARM 88–84 (17–24)

Plicata, W Sturt. 1920

Brief. White S. and F. finely frilled pallid violet; 40 in.

Details. S. arching; F. ruffled, flaring to drooping.

Remarks. Type Ma Mie.

VESPER GOLD 89 (5)

(Pocahontas x —)

Self, blend (m) Longfield 1927

Brief. Cream buff flushed amber yellow; beard conspicuous red orange; 40 in.

Details. Flower occasionally flushed vinaceous; haft conspicuous, reticulated hazel.

Remarks. Comparable to Ochracea but clearer.

VOLUMNIA 77–76 (6)

(Caterina S.)

Self, VB-*B (m) Hort 1924

Brief. Soft bluish violet, haft lighter; 42 in.

Details. S. arching; F. rounded-drooping; fragrant.

Remarks. Type Albert Victor-Drake.

WHITE AND GOLD

Self, W Nicholls 1928

Brief. White with palest green reflections at center; beard conspicuous, yellow; 37 in.

Details. S. ruffled, arching; F. flaring.

Remarks. Larger than White Star and whiter in effect.

WHITE QUEEN 81 (14–20)

Self, W Gey. 1918

Brief. White with faint green reticulations at haft; 30 in.

Details. S. arching, F. flaring, narrow; thrifty growth.

Remarks. Type La Neige. H. C., R. H. S. 1916; C. M., N. H. F. 1922.

WHITE STAR

Self, W Nicholls 1928

Brief. White with faint lemon reticulations at haft; 3 ft.

Details. Beard yellow, conspicuous; S. erect, F. horizontal.
Remarks. Type La Neige; ivory effect in distance.

WOODLAND

(William Marshall x —)

Self, R-V (m) Hall 1925
Brief. Mauve to chinese violet; 4 ft.
Details. High branched; S. cupped, F. straight-hanging.

ZADA 78–81 (2–6)

Self, W Emigholz 1926
Brief. White thruout, claw reticulated maroon to olive; 3 ft.
Details. S. cupped; F. flaring; beard white, orange tipt only at base.
Remarks. Type Edith Cavell.

ZWANENBERG MB 80–82 (20–31)

(Regelio-pogon) (Lutescens aurea x susiana)

Bicolor, blend (m) Denis 1909
Brief. Early, S. grayish lavender washed and veined olive bluff to hessian brown; F. velvety ecru olive to old gold, splotched burnt lake; 13 in.
Details. S. cupped, F. flaring; beard sparse, ecru olive; pollen plenty.
Remarks. Unique coloring, smooth textured. C. M., N. H. F. 1912; 1922.

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By R. S. Sturtevant

Of the seven hundred odd Tall Bearded Irises recently rated in the Symposium almost five hundred have been described in the Bulletins of the Society. It has been our policy to attempt no descriptive records of poor varieties so that for the identification of older varieties you must consult the publications of the Experimental Station at Ithaca, N. Y. (Bulletin 112 and Memoir 100). As the compilation of these records can not be completed until all introductions cease (apparently a vain hope), they have been published in Parts in various Bulletins. The numbers given after the name refer to the Bulletin wherein the description is given.

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Rhoda 9
Rialgar 29
Richard II 7
Ringdove 9
Robert W Wallace 12
Rodney 6
Romany 9
Roméo 6
Romola 29
Rosado 29
Rosalind 9
Rose Madder 6
Rose Unique 9
Rose Salterne 12
Roseway 9
Rotorua 12
Rubyd 29
Ruth Rand 9

Salonique 29
Samite 7
San Francisco 29
San Gabriel 12
Santa Barbara 29
Sapphid 29
Sarabande 7
Sarpedon 6
Saul 12
Sea Foam 29
Sea Gull 12
Seminole 9
Sequoiah 12
Shalimar 7
Shekinah 6
Shelford Chieftain 9
Sherbert 6
Sherwin Wright 7
Shrewsbury 7
Silverado 9
Silver Mist 12
Silvia 9
Simone Vaissière 12
Sindjkha 7
Snow White 29
Solana 12
Soledad 9
Sophronia 29
Souv. de Loetitia Michaud 12
Souv. de Mme. Gaudichau 6
Speed 12
Stamboul 6
Stanley H. White 6
Steepway 9
Sudan 9
Susan Bliss 6
Suzanne Autissier 12
Swatara 12
Swazi 6
Sweet Lavender 9
Syphax 9

Taffeta 12
Taj Mahal 6
Tamar 7
Tamerlan 9
Tancred 29
Tartarin 7
Tenebrae 7
Thelma Perry 9
Thorbeck 7
Timur 29
Tintallion 29
Titan 6
Tom Tit 9
Tregastel 9
Trianon 12
Trinidad 9
Tristram 9
Troades 12
trojana 6
Troost 9
Tropic Seas 12
True Charm 29
Turco 12
Twin Larches 9
Tyrian 6

Ute Chief 9

Valery Mayet 9
Valkyrie 6
Vanessa 12
Vesper Gold 29
Victorine 7
Viking 12
Viola 9
Violacea Grandiflora 7
Virginia Moore 6
Volumnia 29

White and Gold 29
White Knight 6
White Queen 29
White Star 29
Wild Rose 6
William Marshall 9
Windham 9
W. J. Fryer 6
Woodland 29
Wyomissing 9

Yellow Hammer 12
Yellow Moon 9
Yeoman 12
Yolande 12
Yvonne Pelletier 12

Zada 29
Zua 7
Zouave 12
Zulu 7
Zwanenberg 29

SCIENCE SERIES NO. 3

Chromosomes in Iris Species

By A. E. Longley

A study of the chromosome condition in Irises has claimed the intermittent attention of the author for several years. The variation in number and the irregular behavior of the chromosomes in a few representatives of this genus seem sufficiently characteristic to warrant this preliminary note.

Two early workers, Strasburger (8) and Miyake (5), reported 12 as the haploid chromosome number for *Iris squalens, I. pseudacorus, I. germanica, I. spuria, I. florentina* and *I. pallida.* This number unquestionably represents the basic number for Irises, but in many horticultural varieties and in several species the chromosome number exceeds 12 and in a plant of *I. versicolor* the somatic number is over 100.

Material and Methods

The collection and study of the chromosomes in pollen-mother-cells of Iris was started seven years ago in the Laboratory of Plant Morphology, Harvard University, under the direction of Professor Jeffrey. I wish at this time to express my sincere thanks to him for suggestions while studying in his laboratory, and to the director of the University Botanic Gardens for the privilege of collecting from the large number of named varieties growing there. More recently material from various sources has been available and included in the study.

The early collected material was killed with chromoacetic killing fluid, embedded, sectioned and stained with Haedenhain's Haematoxylin. Preparations made in this way were satisfactory only when great care was taken in the dehydration and embedding processes, otherwise the large mother cells collapsed and were useless for detail examination.

Recently iron-aceto-carmine has been used in staining pollen-mother-cell preparations. This quick-acting staining reagent has been very satisfactory for both freshly-collected material and material previously killed with acetic-absolute (1–3) killing fluid.

Chromosome Studies

Two groups are made of the Irises studies; the first includes the few available species, the second includes three dozen or more horticultural varieties. This grouping is purely artificial and is used only for convenience.

Iris Species

Iris versicolor is possibly the best known and most widely distributed of our native Irises. An examination of the chromosomes in pollen-mother-cells collected from two forms growing at Cambridge, Mass., and from wild plants found at Yarmouth, Nova Scotia, Wilmington, N. C., Alabama and Rosslyn, Va., show 36, or more chromosomes at diakinesis. The chromosome number of the plant from Alabama is approximately 36 (Plate 2, fig. 3), all units are paired and the reduction divisions seem quite regular. The material from the North Carolina plant has 42 bivalent chromosomes at diakinesis. Plate 2, fig. 4, shows these chomosomes as they appear on the metaphase plate. In marked contrast to these two collections is the chromosome condition in the four other forms studied. In the pollen-mother-cell of all four, univalent as well as bivalent, chromosomes are present at diakinesis. These univalents are very apparent at the heterotypic metaphase, the bivalents collect regularly at the plate, but the univalents are distributed irregularly on the spindle, giving it a very characteristic appearance. A detailed study was made of the material from Rosslyn, Va. The chromosome number of this plant was found to be 44 bivalents and 17 univalents. The number and size relationship of these chromosomes are pictured in Plate 2, fig. 6. The position of the chromosomes has been disturbed by the pressure used in separating the chromosomes for counting and drawing. Plate 3, pictures 11 and 12, show better the characteristic appearance of a metaphase and an anaphase spindle. The behavior during the reduction phases of all bivalents is seemingly regular, while the univalents have the choice between dividing in the heterotypic or the homotypic division. Plate 2, fig. 5, shows a heterotypic spindle in which some univalents are passing to the poles undivided, while others are seen dividing in the central region of the spindle. It is more usual to find all univalents going at random, undivided to the two poles. A few univalents may fail to be included in the two daughter nuclei, and are left in the cytoplasm either to degenerate or be-

come the centers about which minor nuclei are formed. The homotypic division appears normal in the majority of observations. The large number and the elongated character of the chromosomes at the homotypic phases prevented studying the later behavior of the various chromosome types.

It is apparent from these chance samples of material of *I. versicolor* that the chromosome number in this species is much higher than 12, a number predicted by Miss Sawyer (7) in her figure of a zygote showing approximately 24 chromosomes, the male parent of which was supposed to be *I. versicolor*. It is impossible at this time to assign to *I. versicolor* a definite chromosome number. A further collection from wild plants is very desirable and should throw light on the interesting question as to whether geographically isolated forms have a different chromosome number. It seemed likely, however, that cross pollinations, or even self-pollinations, of plants with univalent chromosomes present, will give progenies with varying chromosome numbers, consequently it is possible that a student of the chromosomes of this species will find variation in chromosome numbers of plants growing side by side.

Iris ensata was grown from seed introduced under the F. H. B. No. 45159. It was found to have 20 chromosomes at diakinesis. The behavior of the chromosomes in the pollen-mother-cell is regular, such as characterizes a stable species.

Iris cristata is a native species characterized by the basic chromosome number 12. This species and *I. pseudacorus* are the only ones examined with this low number. The regular behavior of the chromosome elements is pictured in Plate 1, fig. 1, and Plate 3, pictures 1 and 3. Both of these species have a large percentage of good pollen, and are in marked contrast to the conditions found in horticultural varieites.

Horticultural Varieties

This group includes the great majority of Iris plants commonly found under cultivation. In the three dozen forms investigated the basic chromosome number is apparently 12, but in addition to these 12 regularly pairing units are varying numbers of small univalent chromosomes. The origin and true character of these supernumerary chromosomes has not definitely been determined. The behavior of the univalents is quite similar to those observed in *I. versicolor* except a greater number of them divide in the

TABLE I.

HORTICULTURAL VARIETIES OF IRIS

	NAME	VARIETY	CHROMOSOME NO. Bivalent	Univalent	POLLEN
1.	Iris flavescens	baxteri	12	few	
2.	Iris flavescens	Canary Bird	12	few	
3.	Iris germanica	atropurpurea	12	10?	Very bad
4.	Iris germanica	Kharput	12	few	
5.	Iris germanica	King Edward VII	12	several	
6.	Iris germanica	Purple King	12	several	Very bad
7.	Iris germanica	Purple Prince	12	19?	
8.	Iris mandschurica		20 ±	?	Bad
9.	Iris pallida	dalmatica	12	few	
10.	Iris sambucina	Mephistopheles	12	few	Very bad, c
11.	Iris variegata	Mrs. E. A. Barr	12	few	Very bad
12.	Iris variegata	Princess of Teck	12	few	
13.	Iris variegata	Samson	12	few	
14.	Iris	Amabilis	12	some	
15.	Iris	Calypso	12	few	
16.	Iris	Caprice	12	few	
17.	Iris	Count de St. Claire	12	few	c
18.	Iris	Delicata	12	few	
19.	Iris	Her Majesty	12	several	
20.	Iris	Jacquesiana	12	2	
21.	Iris	Khedive	12	few	B
22.	Iris	La Tendresse	12	few	c
23.	Iris	Leonidas	12	few	
24.	Iris	L'esperance	12	few	Bad
25.	Iris	Mandraliscae	12	few	
26.	Iris	Mme. Chereau	12	few	Very bad, c
27.	Iris	Mme. Pacquitte	12	few	
28.	Iris	Morphee	12	few	
29.	Iris	Mrs. G. Darwin	12	few	Bad, c
30.	Iris	Mrs. H. Darwin	12	few	
31.	Iris	Neglecta	12	some	Very bad
32.	Iris	Penelope	12	few	
33.	Iris	Rembrandt	12	few	c
34.	Iris	Sir Walter Scott	12	few	Bad, c
35.	Iris	William Wallace	12	some	
36.	Iris	Unique	12	few	

heterotypic division and a large number of them are extruded into the cytoplasm about which minor nuclei are formed. Plate 1, fig. 3, shows an anaphase plate in one of the varieties of *I. germinica*; the chromosomes seen on the spindle are the halves of recently divided univalent chromosomes. Plate 2, fig. 4, is a similar division spindle but in this case more of the univalents have gone undivided to the poles and only a few are dividing at this stage. Plate 1, figs. 5 and 6, are later stages of the pollen-mother-cell. At interkinesis the dwarf nuclei are frequently very numerous. The division of the two major nuclei and some of the minor ones in the homotypic division results in the production of a tetrad with considerably more

than the expected four pollen grains. The result of such irregularities is the production of pollen grains with varying numbers of chromosomes, which in turn seem to be associated with the appearance of large percentages of dwarf and empty grains in samples of mature pollen.

In the last column of Table 1 the pollen condition in over a dozen varieties is given. By "bad" is meant that at least 50 per cent. of the pollen is empty or abortive, while "very bad" means that at least 75 per cent. of the pollen appears sterile. The letters "b" and "c" are from Miss Cover's (1) study of Sterility in Irises and indicate fair germination and little or no germination, respectively. It seems exceptional to find good pollen in our horticultural varieties.

In this report the number of small extra chromosomes that characterizes each individual given in Table 1 is not attempted. The Germanica group shows great variability. Plate 1, fig. 2, shows a variety with 2 univalents, while fig. 4 of the same plate shows another variety with 19 divided and undivided univalent chromosomes.

The presence of supernumerary chromosomes and the resulting irregularities in pollen formation are not confined to the Germanica group but are found in representative forms of all the groups of cultivated Irises included in this study. Nor are these characteristics found only in our cultivated varieties for very similar conditions have been described in the foregoing paragraphs for *I. versicolor,* one of our native wild species.

The chromosome irregularities that have been observed in horticultural varieties of Irises are those generally associated with plants of hybrid origin. Hybridization as the cause of irregularities in the chromosomes of *I. versicolor* is not so acceptable, but the resemblance of the chromosome condition in this native wild species and in the much-hybridized group of horticultural varieties suggests very decidedly a hybrid ancestry for our commonly known *Iris versicolor.*

Discussion

The two outstanding chromosome characteristics of the Iris species and varieties studied are the prevalence of univalent as well as bivalent chromosomes in the pollen-mother-cells of horticultural varieties of Irises, and secondly, the existence of polyploid wild Irises.

It is almost a quarter of a century since Rosenberg (6) called attention to the presence of both univalent and bivalent chromosomes in a Drosera hybrid. Since this early work describing what is known as the "Drosera type" of chromosome distribution, several types of irregularities have been found to characterize plants known to be hybrids between forms with different chromosome numbers. Jeffrey and Hicks (2) in their recent discussion on mutations picture characteristic hybrid chromosome behaviors in two Cryptogamic hybrids, one a cross between *Isoetes echinospora* and *I. lacustris,* the other in *Nephrolepis exaltata* var. *bostoniensis.* Tischler's (10) recent résumé of cytological literature shows that in the phanerogams, variations in chromosome number and chromosome behavior are too numerous to be cited individually in this short discussion.

The first reference to an abnormal reduction in Iris is that made by Strasburger (9) when he draws attention to the discovery that in the pollen-mother-cell of *Iris pumila* there may be several division spindles. It is apparent that in Irises we have a chromosome behavior that is generally recognized as characteristic of hybrids.

It does not seem unreasonable to accept the view that hybridization has been playing an important rôle in bringing together incompatible chromosome combinations in Irises, which in turn give rise to such irregularities in the reduction phases of the pollen-mother-cell as have been pictured for a representative group of cultivated forms.

It seems a little more difficult to be reconciled to the hybrid characteristics so apparent in *I. versicolor.* However, the varying number of chromosomes and the presence of both univalents and bivalents in the pollen-mother-cell seem strong evidence supporting the view that this widely distributed native Iris has come either remotely or recently from a mixed ancestry.

It is not exceptional to find in a genus both diploid and polyploid wild species. We have found just this condition in the wild species of Iris investigated. It is more exceptional, however, to find cultivated forms more closely related to the diploid representatives than to the polyploid forms. This is, however, the case in the genus Iris and in two other plant groups studied by the author. *Fortunella Hindsii* (4), the only wild representative of the genus Fortunella, is tetraploid, while the cultivated forms are diploid. *Zea mays* (3) is another cultivated species whose near wild relative, *Euchlaena perennis,* has twice as many chromosomes.

These and other chromosome studies of cultivated plants and their wild allies suggest that a high chromosome number has not been the deciding factor in the conscious or unconscious selection of plants for cultivation.

Chromosome multiplication is a phenomenon that seems to have played an important rôle in multiplication of plant forms in a large number of polymorphic genera. The frequent occurrence of polyploid species in cultivated plants suggested that polyploidy is associated with plant cultivation and artificial selection. Polyploidy, however, is of general occurrence and the chromosome condition in any group of cultivated plants may resemble either diploid or polyploid forms; that is, the chromosome number of a cultivated plant may be that of diploid wild ancestor either with or without recent modifications, or may be that of a polyploid wild ancestor with or without recent modifications.

The chromosome condition in cultivated Irises, excluding what appear to be recent modifications, resembles the chromosome condition in diploid Iris species.

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Plate I.

Fig. 1. Heterotypic anaphase of *I. cristata.*

Fig. 2. Heterotypic metaphase of *I. germanica,* hort. var. Jacquesiana showing 2 supernumerary chromosomes

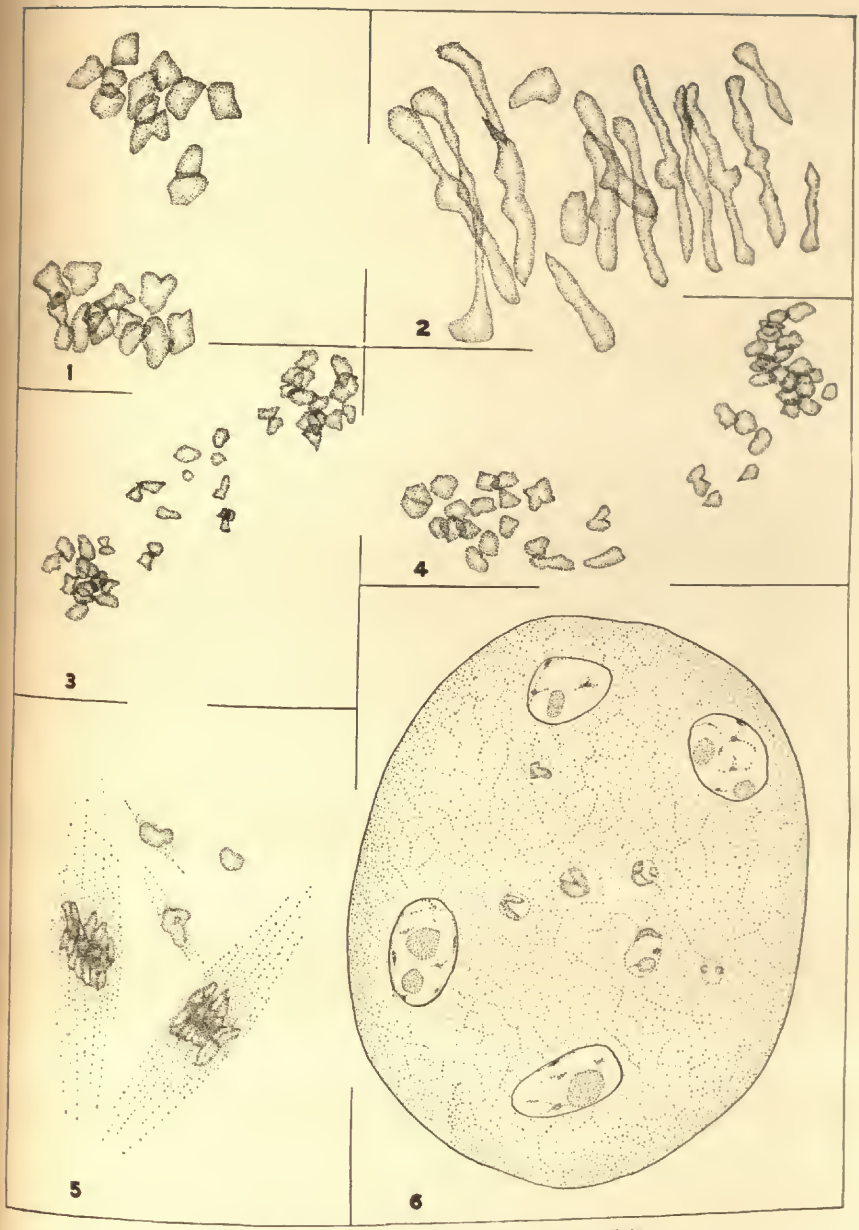
Fig. 3. Heterotypic anaphase of *I. germanica,* hort. var. atropurpurea with divided univalent chromosomes on the spindle.

Fig. 4. Heterotypic anaphase of *I. germanica,* hort. var. Purple Prince with very few of the univalent chromosomes dividing at this stage.

Fig. 5. Homotypic metaphase of *I. germanica,* hort. var. King Edward VII with extruded chromosomes in the cytoplasm.

Fig. 6. Late homotypic telaphase in *I. germanica,* hort. var. Purple Prince showing 4 major and several minor nuclei.

PLATE I



Phases in pollen-mother-cell divisions of Iris.

Plate II.

Fig. 1. Diakinesis in *I. ensata.*

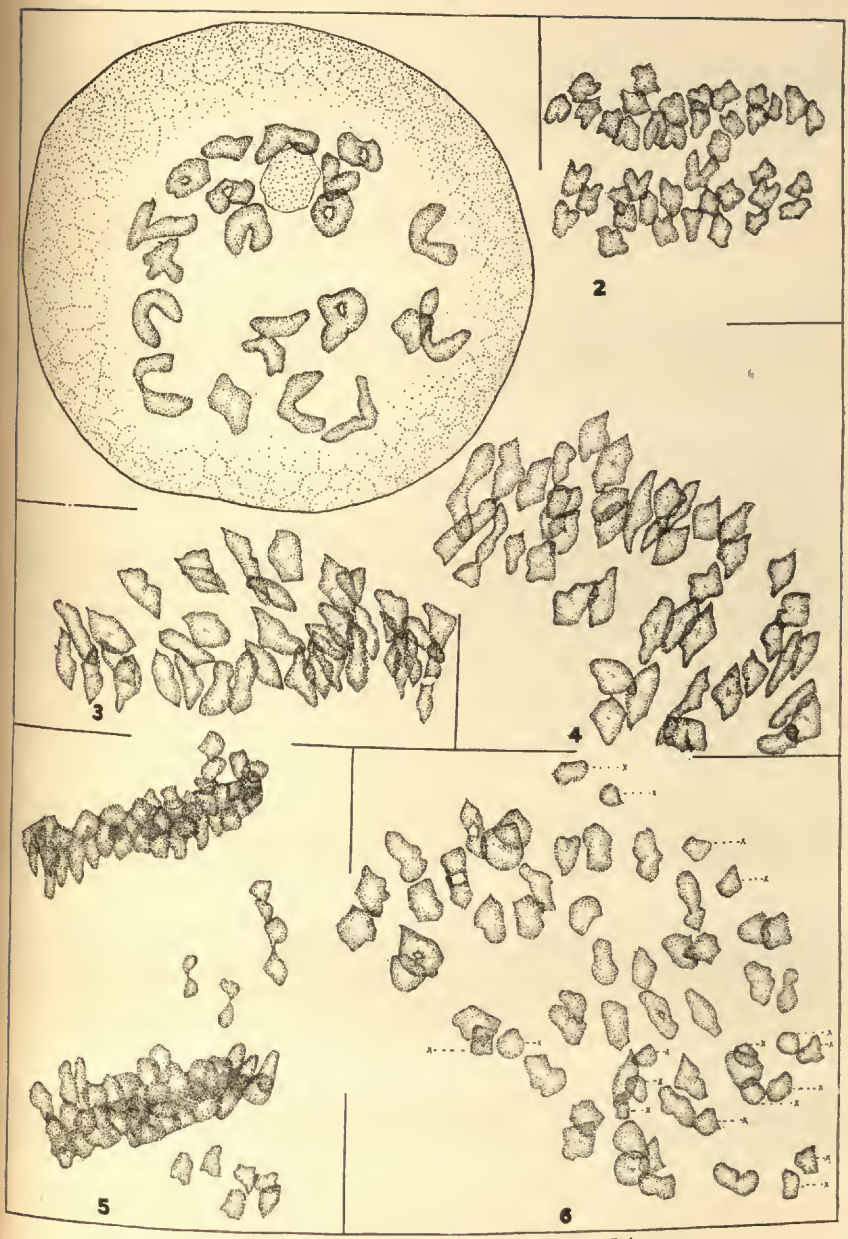
Fig. 2. Heterotypic anaphase in *I. ensata.*

Fig. 3. Heterotypic metaphase in a 36-chromosomed form of *I. versicolor.*

Fig. 4. Heterotypic metaphase in a 42-chromosomed form of *I. versicolor.*

Fig. 5. Heterotypic anaphase of *I. versicolor* showing undivided univalents preceeding and dividing univalents following the divided bivalents in their movements towards the poles.

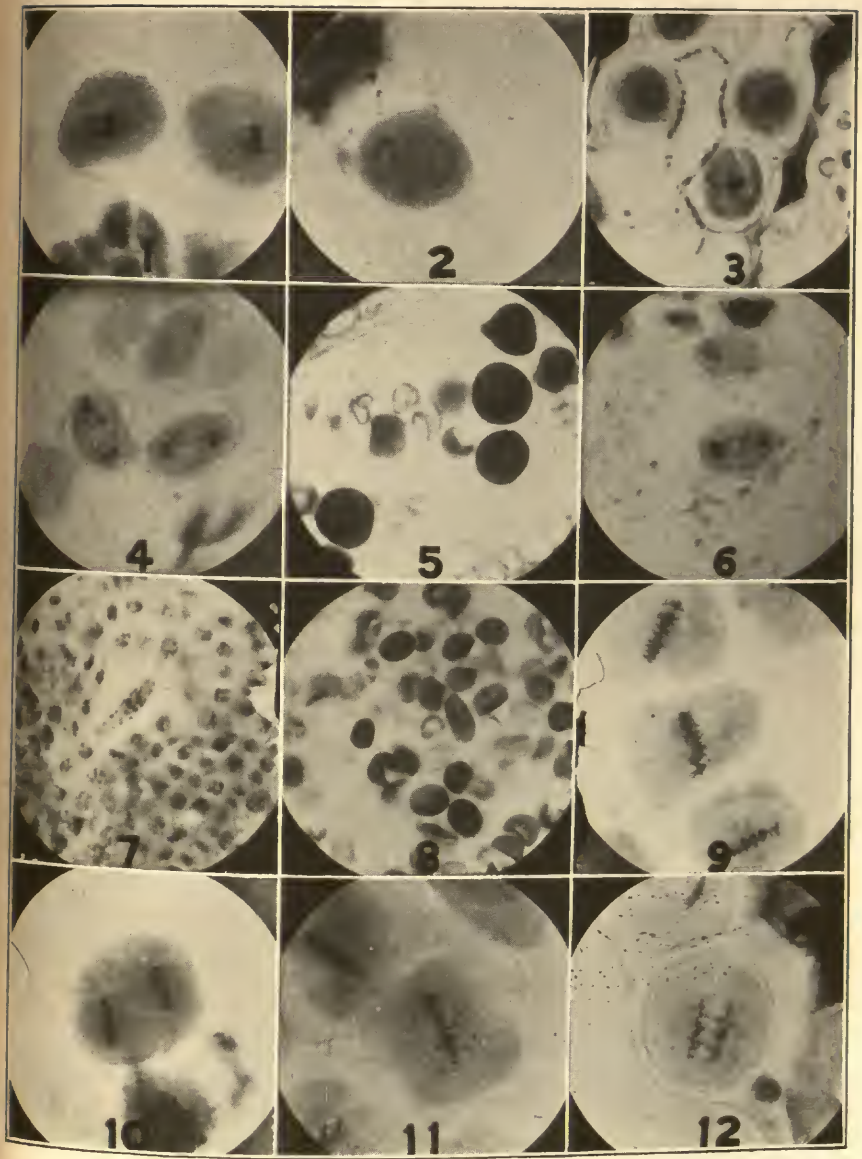
Fig. 6. Heterotypic metaphase in a form of *I. versicolor* with 44 bivalent and 17 univalent chromosomes (marked with x).



Phases in pollen-mother-cell divisions of Iris.

Plate III.

Fig. 1. Heterotypic metaphase of *I. cristata.*
Fig. 2. Interkinesis in *I. cristata.*
Fig. 3. Heterotypic metaphase of *I. pseudacorus.*
Fig. 4. Heterotypic anaphase of *I. germanica,* hort. var. atropurpurea.
Fig. 5. Pollen in *I. germanica,* hort. var. atropurpurea.
Fig. 6. Heterotypic anaphase of *I. pallida,* hort. var. dalmatica.
Fig. 7. Early heterotypic metaphase of megaspore-mother-cell of *I. mandschurica.*
Fig. 8. Pollen in *I. mandschurica.*
Fig. 9. Heterotypic metaphase of *I. versicolor* from Wilmington, N. C.
Fig. 10. Homotypic metaphase of *I. versicolor* from Wilmington, N. C.
Fig. 11. Heterotypic metaphase of *I. versicolor* from Rosslyn, Va.
Fig. 12. Heterotypic anaphase of *I. versicolor* from Rosslyn, Va.



Photomicrographs of megaspore- and microspore-mother-cells and pollen of Irises.

Root Growth of Iris

By J. Marion Shull

It is something like writing for a confession magazine thus to record in detail the intimate responses of a much mistreated member of the garden family but a certain amount of vivisection is absolutely necessary to the acquiring of certain types of essential knowledge and this must be the author's apology, if any be needed, for the case of cruelty to plants herein described.

Curiosity as to the exact root behavior of an Iris led up to the experiment, which is here presented for the most part in picture form. A medium sized rhizome of Iris Koehi was carefully lifted from the colony where it had wintered. This was gently washed free of soil and a photograph taken on April 27. The smaller inset illustration shows the root system as it existed at that time. For purposes of scale it should be said that this plant was about one foot in height from base of the rhizome to the tip of the longest leaf. At the right are the dead remains of roots of an earlier period.

This plant was then root pruned as shown in the left upper corner of the larger illustration, and returned to the soil within twenty-four hours. Here it was allowed to remain for a period of two months, when on June 27 it was again lifted, washed, and photographed, as shown in the next figure to the right. Close examination of this will show that none of the root stubs left in the first pruning has functioned further as a root, all being dead and shriveled. Four main new roots have put out from the forward portion of the rhizome and a couple lesser ones from lateral eyes beginning to develop. These smaller ones mark the root beginnings of new divisions of the rhizome, which very soon become quite independent of the parents as regards their root systems.

The pruning knife was now applied a second time, removing all dead roots and cutting back the stubs as seen, again to the right. It may be noted that more rootlets are in evidence than when first pruning was done, and this, coupled with the fact that the plant was kept moist and returned to the ground within twelve hours, may partly account for the fact that in this case the stubs did not die but have freely branched from near their extremities and have continued to function as roots. This is shown in the right

upper corner of the picture from a photograph taken August 26, or after a second two-months' period.

Once more the plant was reset, but this time without cutting the roots back. Here it remained to the end of the growing season or,

Iris Kochi, April 27, 1927. One third natural size.

to be exact, until November 8, a little more than two months from the last previous removal. It is now shown in the lower left figure, photographed on a slightly larger scale, but may be compared with the upper right to see what has happened in the meanwhile. It

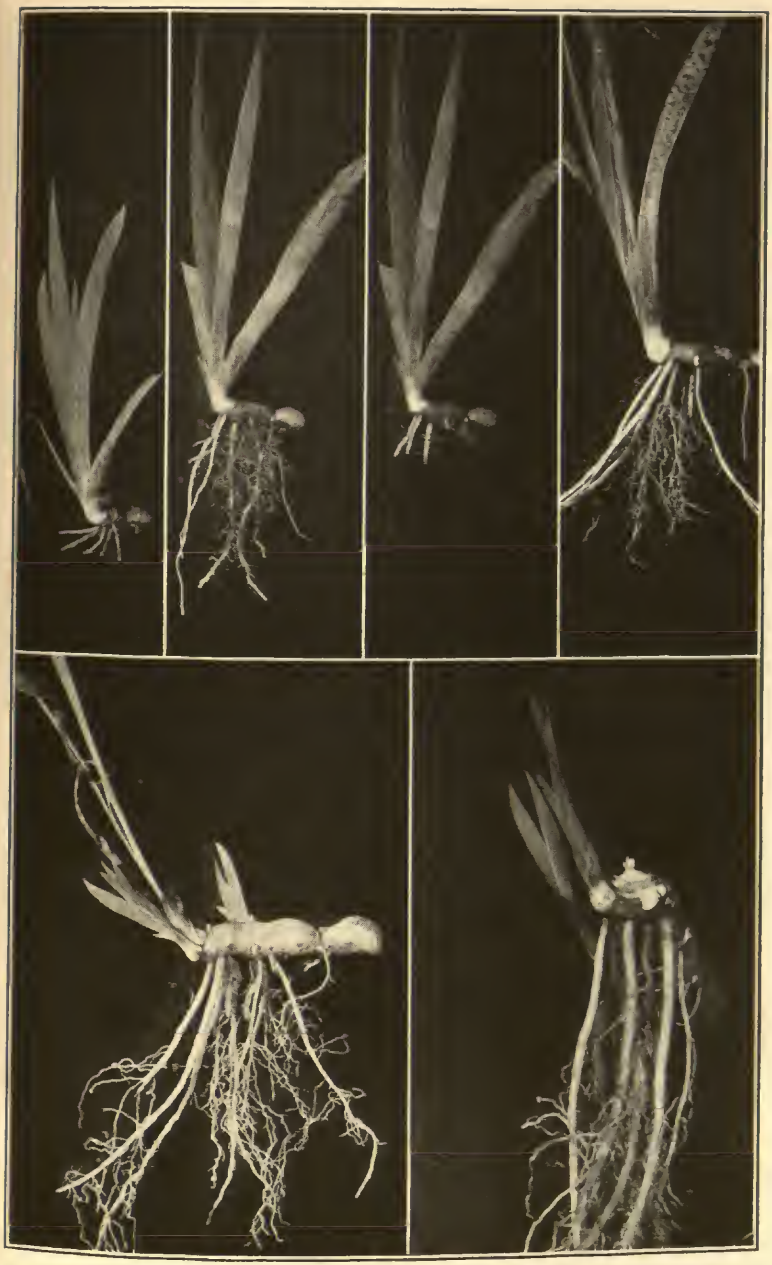
will be seen that no new main roots have issued during this latter period of growth. Those that issued during the preeeding period have enlarged slightly and have sent out numbers of feeding rootlets or smaller branehes evidently destined to see the plant over winter and to provide the water-supply for the outburst of spring. The still older roots, represented by the branehed stubs, while apparently still alive are obviously near the end of their aetive existence and are beginning to eollapse.

To the rhizome itself this latest period has brought rather more notieeable ehanges, as in the autumnal drying off and shedding of summer time leaves, and the eonsiderable growth of lateral buds toward the making of new rhizomes.

Now a number of eonelusions might be drawn from this series, subjeet always to the possibility that response may vary somewhat in eonsonanee with varying growing conditions one year with another. The season of 1927 was rather dry and abnormally cool during the first half, and this may possibly be refleeted in the dying of the first root stubs left as eompared with the results of similar treatment later. Or, on the other hand, they may have been merely more senile after standing over winter and therefore less able to respond by throwing out new branehes as was done in the later instanee.

It would appear also from these pietures that no truly dormant period occurs in summer time but that major root produetion is continuous except in autumn, when, in common with most woody plants and other perennials, more of the energy is diverted to preparing for winter and for the outburst of growth and bloom of the following spring.

But more than anything else stands out the dependability of the Iris as a garden perennial, for despite all this ill treatment and discouragement this plant of Kochi has gone on and prepared a flower stem all ready set on November 8 for the big parade seheduled for the following May. The figure at the lower right shows the plant with the leafage of the main bud disseeted away, disclosing the entire inflorescence. As yet there is no stem to lift it above the rhizome but two of the individual flowers are easily seen at the left while the rest remain hidden by the enfolding sheath at the right. Could anything speak more eloquently of the dependability of the Iris? Any plant that will do so mueh under sueh adversity will eertainly win out when given anything like proper eare and attention.



Same root of Iris Kochi, approximately one fifth natural size. Top row: April 27, pruned; June 27; June 27, pruned; August 26. Bottom row: November 8, showing roots; same showing blossom buds.

TID-BITS 16TH

DOUBLE CELESTE: Rather late last fall Mrs. James C. Allison, of 117 Hillcrest Road, Raleigh, N. C., sent me six roots of what was promised as a double-flowered Celeste, and despite an unusually bad winter there were three stalks of bloom this spring. Out of the total twelve to fifteen flowers only one was normal and of the others the majority were what in Irises we call double. In other words, there were six falls and six standards symmetrically disposed and even the style-branches tended to become petaloid. A plant that throws such abnormal flowers under such conditions is most exceptional. Abnormal flowers are not unusual in some varieties but I have no other record of any variety so constant in its abnormality and I consider the plant well worthy of trial in other gardens. Its effect is decidedly not that of an Iris even though it has the characteristic leafage and branching, and I will confess that those to whom I showed it were rather contemptuous of a "double Iris," but in the garden it gives a more continuous mass of color and as a cut-flower it has something of the charm of a full-blown but still perfect rose. Much to my surprise I find myself looking forward to its flowering again next spring and I fully expect it will become a permanent occupant of my new garden.

"There is no intent here to glorify freak forms nor to desert entirely those safe grounds where conservative form is considered among the important decencies. There is, however, a protest against the establishment of standards so fixed and so arbitrary as to result in a race of Iris that could achieve distinction only upon the exhibition table and be of little use in brightening a corner in a backyard garden." Though divorced from its delightful content in "The Iris Papers, No. 5," by R. Marshall, the above quotation expresses well my appreciation of even so strange an abnormality as Double Celeste.

* * * * * *

COLD STORAGE Experience.

Each year so uncertain is the season some enthusiastic exhibitor is forced to try Irises in cold storage, but rarely do we receive a report of experience as clear as that of John E. Hill. The prize

winning stalk of Mme. Gaudichau was outstanding at the Providence, R. I., show, itself markedly good for a first performance. Prof. Hill says: "Stalks were cut on which two or more buds were about to open—that is, the buds would have opened within a day. Each bud was wrapped loosely in waxed paper (possibly tissue paper would have been better) and tied up with raffia. All open flowers were closed, loosely wrapped and tied. Several stalks were then placed together and rolled up loosely in newspaper and the root ends of the stalks placed in a pail of water.

Pail and contents were then placed in a cold storage compartment—temperature 34°–36° F. Some of the stalks were in storage six days, others two or three days.

All were brought out, the wrappings taken off and the stalks placed in water the night before the show.

All or nearly all of the buds that had been wrapped opened perfectly, but most, if not all, of the opened flowers which had been wrapped had a crushed appearance and were in poor condition.

Storage did not seem to affect the color but the size of the blooms was slightly smaller than normal. Wilting during the show was not abnormal.

One stalk of four blooms which had been in storage six days received a first prize and was one of the finest, if not the finest, stalk in the show. Another stalk received a second prize, and a third stalk in storage three days received a first prize.

One experiment is, of course, not conclusive, and there may be better ways of accomplishing the result, but one may assume that Irises may be kept in cold storage for a week, for exhibition purposes, if the technique outlined is followed."

* * * * * *

EUROPEAN NOTES: From Countess Senni.

At the Chelsea Show the best exhibit was that of the Orpington Nurseries varieties and the ones I liked best were:

STORM—a new Intermediate, soft gray snuff and petunia standards with very deep pansy falls, a beautiful color.

MOONBEAM—another Intermediate, clear, pale lemon yellow.

Harmony, Romola, Majestic, Montezuma, Centurion you already know by experience.

I saw and admired the expensive GRACE STURTEVANT—a very bold, dark, rich flower and once more decided that Aphrodite will bloom unseen and unlonged for by me; it is far too magenta.

1928 Paris Exhibition

At Cours-la-Reine both Vilmorin and Cayeux had beautiful ex-bigger Turco that I should plant near Ingres; AGNES SOREL—bigger Turco that I should plant near Ingres; AGNES SOREL—similar, very light smoke and lilac, small; LE POUSSIN—warm, soft lilac, almost pink with a very yellow beard and center; MME. CLAUDE MONET—very rich, something like Le Poussin but with a deep wine plum fall—a brilliant and showy flower which should look well near Mrs. Alan Gray to give it tone and depth. EREBE was very dark purple, ANDROMEDA soft dull smoke and purple, MIDGARD a fine pink, perhaps a shade mauve but light, airy and good—veined like Troost, but the whole effect lighter. Seedlings BD24, L24, and H21 were lovely.

Cayeux's outstanding Iris to my prejudiced eye was a huge bowl of MARQUISETTE, a magnificent pale flesh-cream or pale shrimp lavender—a striking mass of an unusual light color which would be priceless among the deep reds. He had MARIE LOUISE, a fine rather deep pink, very, very good, with quite a lot of cream beard; ODETTE OLIVETTE, a good warm lilac—almost Mrs. Alan Gray; MIRIAM; LE VARDAR, a fine light even lilac-pink, tall and good, almost no beard; BELISAIRE, MANSARD, BOUREM, MME. ABEL CHATENAY; FRANCHEVILLE, a more plum-colored Belisaire, or better Le Grand Ferré; LIBERTY, pale mulberry or old rose, a delightful Iris and good with Francheville; ZINGARELLA, warm prune with a yellow center. Clematis flowered; GAULOIS—salmon red and snuff, one of the finest for the red and brown group; FLORIDOR, slate blue; FLORIAN, one of the finest port wine or plum reds, though, alas! still not in commerce; AZIYADE, HERODIADE, ENSORCELEUR, CONQUISTADOR; FORTUNO, a good medium blue, Clematis flowered; LELIA—a good warm magenta and smoke; HELIOS, an excellent tall primrose yellow; LA NUIT, deep and tall purple violet; ANNE-MARIE CAYEUX, a beautiful warm smoky lilac; BOREAL, OPHELIA, FASCINATION, SENSATION, THAIS, PAVANE, and PLUIE D'OR, a tall deep yellow. Remember, all these notes are purely from the point of view of color and form is not considered at all.

From Mrs. Lucius Hitchcock.

I was so fortunate as to see the show and also to go to the Millet, Vilmorin, and Cayeux gardens. The one conclusion has been that

we have nothing to envy them for but climate and that only for the choicer Apogons. At the Show Cayeux had a big exhibit and they were almost all familiar faces. The seedlings were very good but faded and were glorious in their gardens where they are giving much time to seedlings with some splendid results. The favorite colors seem to be the rich bicolors on the order of Fryer's but none the less lovely, and the ones they have put out called "Art Shades" are very attractive to me, for they are of the form of La Neige with the same substance and an added frilliness of petal. They are bicolors in delicate tones and named for painters.

One of their newest seedlings was the most glorious Iris I ever saw and I cannot describe it except as one of the Magnifica type with much more character, color and solidity.

Another day I went to see the Apogons in flower, new crosses and developments of Ochraurea and *aurea*—a whole bed of Shelford Giant, *ochroleuca, aurea,* and best of all Ochraurea. It took my breath away and I was downright envious—such a soft and yet brilliant creamy yellow with the falls a rich yellow with lighter

Experiment for growing Oncocyclus, Regelia, and Regelio-cyclus Irises
Elevation 50 cm.

edges. And there was Guldenstadtiana, Monaurea, Dorothy Foster, Monnieri, and our familiar *foliosa* and one that was either Dorothea K. Williamson or Fulvala. There were some seedlings of *fulva* and Fulvala blooming for the first time with the *foliosa* form and a Red Emperor coloring—also one of a dull reddish-blue. *Pseudacorus* edges all the streams, the *spurias* were in bloom too and plenty of the English Irises, and it does your soul good to find all these in the markets and flower booths. But they have none of your lovely Siberians except *sanguinea* and Graudis and none of *versicolor*.

From Joseph Aerts, 41 Rue Horace, Bruxelles, Belgium.

First to flower was *I. reticulata* Feb. 20th, then *bucharica* the 24th, and then *sindjarensis* on Mar. 5. *Tingitana* was in bud in early February and I covered the plants up each night with sacking and I lost only one bulb. For the Oncocyclus and Regelias I made a bed, raised about a foot and put in a brick drain covered with soil-heavy clay mixed with fine ashes, 10 lbs. of plaster and 10 lbs. of bone meal. Twenty plants out of thirty will flower and I lost only and each of *lorteti* and *gatesi*. They are so lovely that they are worth replacing and care.

I am sending Mr. Morrison seeds of the following for the benefit of members: *wilsoni, dichotoma, milesi, humilis, ensata, ruthenica, songarica, forresti, furcata* (*aphylla*—Ed.), *prismatica, falcifolia.*

SASKATCHEWAN.

The following varieties have been reported by Prof. C. F. Patterson as hardy at Saskatoon, Canada: Caprice, Celeste, Iris King, Isoline, Lohengrin, Loreley, Maori King, Mrs. Horace Darwin, Nibelungen, Prosper Laugier, and Rhein Nixe. The inclusion of a variety like Isoline suggests that practically any of the garden Irises can, perhaps, be grown more successfully in this climate than much further south where an open winter or early spring may prove fatal.

IDAHO. From David C. Petrie, Regional Vice-President.

The Fifth Annual Show at Caldwell was unusually good and Mr. Hyde exhibited a Prospero that was an easy 42 inches tall with a spread of nearly a foot. Both Mr. Hearne and I are doing much breeding and this year two whites of a *trojana* x Kashmir White cross seem outstanding. I wish that we might get more of the growers here to join the Society.

KANSAS. Notes from J. R. McLeland.

Any member with a special interest in species crosses, particularly if interested in the American species, should get in touch with Dr. McLeland who has collected and hybridized for many years. He writes of three kinds of *I. versicolor,* the little Eastern species, the larger West-Central species, and the southern Carolina species which extends north and mingles with the others through Virginia, Kentucky, and Arkansas, and of an apparently new species from the last state with white flowers purple edged as in Mme. Chereau, the blooms concentrated in almost an umbel. He says: "Seedlings of these give me both light and dark tones, some carried on erect three foot stems and some well above the foliage. The *spuria-hexagona* crosses were badly winter-killed but a *versicolor* x *albopurpurea* dark purple self was lovely."

THE EXPERIMENTAL GARDENS AT CORNELL.

June 20th found me at Cornell at an instructors' conference and incidentally on my first visit to Ithaca. The Irises were almost at their height and between meetings I had almost as much of an opportunity to see them as at any time during the spring. Col. Nicholls was a splendid host and the enthusiasm with which he and his son Jesse are breeding along theoretically proper lines was a great pleasure. Although I have come to think that third and fourth generation hybrids rarely reveal great variation of color or quality—quite the reverse sometimes, I still have faith that a consistent policy will bring results. With White-and-Gold and White Star for encouragement they vision still finer productions that will combine all good characters. These, by the way, are first class garden whites, hardy, thrifty, of very fair height, and though the first is the larger, White Star in mass has an unusual ivory tone that appealed to me more every time I looked back upon it. The Nicholls garden is in splendid culture, field culture at that, and his selection of varieties intelligently developed.

Ithaca proved a delightful town of ups and downs with frequent glimpses out over Lake Cayuga. It is delightful country for motoring (if your car will climb the steeps) and even more delightful if you have time to stop at one of the many Glens, the deepest and most picturesque of ravines, in the vicinity. In going out to the Experimental Gardens one skirts and crosses one of the smaller ravines, a rocky chasm, tree shaded and mossy, with ferns where

the spray of the water falls. The Experimental Gardens themselves are on a large flat cut into five foot beds if with broad intersecting grass paths. Many of the varieties are arranged according to a tentative color classification to the great advantage of the general picture and new plantings are planned for the hillside looking down upon the garden. Mr. Pridham is doing a fine job not only in rouging and checking names but in his records, and though the wet season I find almost a Waterloo from the weed point of view, the gardens seemed in good shape.

No planting so large that the dead flowers are left can ever look very well but none the less the color masses were good. The peonies were just beginning and here too the landscape value of arranging flowers in color groups was most perceptible.

Mr. Pridham was kind enough to show me his files of records, of catalogues (one of, if not, the largest in the country) etc., and in his annual report for 1927 there is a very full series of charts and graphs of records of blooming dates from first color to last effective blooms. The following note taken from this report may prove of interest to exhibitors.

"Treating the stem end of the stalk with boiling water and also splitting and slashing it under water both proved beneficial as the bloom lasted one to two days longer and was superior in color and vigor."

Further notes on the use of Irises as cut-flowers would be welcome.

The attention of breeders is again called to the fact that the list of Introductions and Registrations for 1928 will be closed on October thirty-first. Names received after this date will be acted upon in order of their reception but will automatically be registered as of 1929 and will not be published until January 1930.

NOTICE

Details of the $100.00 Prize offered by Robert Wayman will be found on page 40 of BULLETIN No. 15.

Publications available from Science Press Printing Co., Lancaster, Pa.

Checks payable to American Iris Society.

Bulletins

No. 1. June, 1920. The Culture of Irises in the United States. 32 pp. Out of print.

No. 2. January, 1921. Garden Irises, Past and Present. 44 pp. The Development of Tall Bearded Irises in the 19th Century. Sir Michael Foster and his Irises. Registration and notes on hybridization and garden effects. $1.00.

No. 3. June, 1921. Sir Michael Foster and his Work. 32 pp. Illustrated. Out of print.

No. 4. January, 1922. 34 pp. Check List (superseded by No. 8). Free on application.

No. 5. May, 1922. Symposium. 32 pp. Numerical ratings of some 700 varieties which are a most valuable guide to the relative value of standard varieties. 50 cents.

No. 6. October, 1922. Description of Varieties, Part I. 40 pp. Notes on European Irises (see also Nos. 7, 9 and 12). $1.00.

No. 7. January, 1923. Descriptions of Varieties, Part II. 40 pp. Articles by A. J. Bliss, W. J. Caparne, and J. M. Shull. $1.00.

No. 8. October, 1923. Check List, October, 1923. 40 pp. This, together with a supplement and lists of registrations in Nos. 14, 18, and 22, gives the authoritative list of all Iris names. Supply nearly exhusted. 50 cents.

No. 9. December, 1923. A review of the Irises raised by William Mohr. 46 pp. Ill. A detailed review of bulbous Irises and their culture. Descriptions, Part III. $1.00.

No. 10. January, 1924. Irises for the Beginner. 60 pp. Ill. A comprehensive treatment of all Irises adapted to the small garden, with recommended lists of varieties, garden and cultural notes. The Directors consider this BULLETIN worthy of a special edition and a copy is given *free to all new members.* You may well advise your gardening friends to purchase it. On sale to non-members at 50 cents.

No. 11. May, 1924. Beardless Irises. 40 pp. Ill. A complete and compact review of the species and varieties of this group of the Iris family. The articles by W. R. Dykes are of especial interest. $1.00.

No. 12. October, 1924. Notes and Descriptions, Part IV. 40 pp. Ill. This brings the list of descriptions up to about five hundred of the finest varieties. $1.00.

No. 13. December, 1924. A Classification of Bearded Irises. 36 pp. The first published color classification of the group and a valuable reference. 50 cents.

No. 14. January, 1925. Bertrand H. Farr. 68 pp. Ill. The man and his work with Irises. Official records of the Society, 1920–1925, including the Code of Nomenclature, a 1924 Bibliography of Iris Literature, the White and Black lists of varieties. $1.00.

No. 15. April, 1925. Irises of the Future. 40 pp. Ill. Articles by Sydney B. Mitchell, B. Y. Morrison, Sherman Duffy, and others. Trial garden reports and records. 50 cents.

No. 16. July, 1925. A Report on Sterility in Irises. 44 pp. Ill. The first scientific study of the subject and the result of research at the New York Botanical Garden. The American Iris Society has been the first popular flower society to initiate and support scientific research. This BULLETIN is not recommended to the casual reader. Supply limited. 50 cents.

No. 17. October, 1925. Japanese Irises and Others. 44 pp. Ill. Prof. Miyazawa speaks of his iris work, M. Denis writes of White Irises, and others tell of their successes. It is an unusually chatty issue. 50 cents.

No. 18. January, 1926. 48 pp. Reports of Officers and of Trial Gardens. Text of Display Garden Agreement. 1925 Bibliography. 1925 Introductions and Registrations. Extracts from Les Iris dans les Jardins, by M. Correvon. $1.00.

No. 19. April, 1926. W. R. Dykes. 40 pp. Ill. Dedicated to the memory of W. R. Dykes, a most interesting and permanent record of a life's work with irises. It includes the most valuable of his occasional writings. Further technical notes on sterility. 50 cents.

No. 20. July, 1926. The Iris of Gerard's Herbal. 32 pp. Illustrated from the original. Iris combinations for the garden. Reports of 1926 exhibitions. 50 cents.

No. 21. October, 1926. Planting an Iris Garden. 44 pp. Ill. Further Studies in Sterility. Iris flavissima and many odd notes from England and America. Supply limited. 50 cents.

No. 22. January, 1927. Exhibition Policy. 60 pp. Ill. 1926 Society Records. 1926 Bibliography. 1926 Introductions and Registrations. Further Sterility Studies. $1.00.

No. 23. April, 1927. Memoriam, Arthur H. Scott. 48 pp. Ill. The value of Iris breeding by S. B. Mitchell. Is scientific research necessary? 1926 Test Garden reports, from the New York Botanical Garden, Brooklyn Botanic Garden, Cornell University, Missouri Botanic Garden. Regelia and Onocyclus Iris. Book reviews. 50 cents.

No. 24. July, 1927. 40 pp. European Iris notes. Reports of 1927 exhibitions. Regelio-Cyclus Irises in Canada. Book reviews. 50 cents.

No. 25. October, 1927. Early Dwarf Bearded Iris. 40 pp. Early flowering species and varieties and their use in the garden. List of Hybrid Iris of W. J. Caparne. Old Iris names. Discussion of the problems of the Iris breeder. 50 cents.

No. 26. January, 1928. 72 pp. Society Records for 1927. Science Series begins with two articles on the Iris Borer. Irises in California Gardens. Tid-bits 15th. $1.00.

No. 27. April, 1928. 68 pp. Garden Reports. Science Series No. 2, Breeding Experiments. Writings of Sir Michael Foster—Bibliography. Some Eastern Iris Gardens. An Iris Roll-call. $1.00.

No. 28. July, 1928. 68 pp. Symposium. The Japanese Iris. The new series of Garden Pictures begins. $1.00.

No. 26. January, 1928. 72 pp. Society Records for 1927. Science Series begins with two articles on the Iris Borer. Irises in California Gardens. Tid-bits 15th. $1.00.

No. 27 April, 1928. 68 pp. Garden Reports. Science Series No. 2, Breeding Experiments. Writings of Sir Michael Foster—Bibliography. Some Eastern Iris Gardens. An Iris Roll-Call. $1.00.

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* From Bulletin 10, page 60.